PAPERS SUBMITTED TO THE ASIAN RELATIONS CONFERENCE MARCH-APRIL 1947

GROUP D
TOPIC VII
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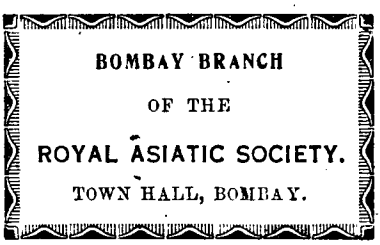

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ASIAN RELATIONS

CONFERENCE

March—April 1947

INTER-ASIAN CULTURAL CO-OPERATION

by

Tan Yun-shan

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GROUP D: CULTURAL PROBLEMS

TOPIC VII: CULTURAL PROBLEMS

INDIAN COUNCIL OF WORLD AFFAIRS

NEW DELHI

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This paper has been submitted to the Asian Relations Conference by the author. The author alone is responsible for statements of fact or opinion in this paper.

INTER-ASIAN CULTURAL CO-OPERATION

Now we hear everybody say that the World War II is over and it has been over more than a year. But, in fact, the world is still shrouded in thick darkness; the atmosphere has not at all become clear and the human mind is still being continually perplexed by all kinds of uncertainties and anxieties. It is not only that world rehabilitation has not yet been completed, that life has not yet returned to normalcy and that people have not yet been relieved from all kinds of hardships and sufferings caused by the War; but even fighting is actually still going on between the Dutch and the Indonesians in Indonesia and between French and the Viet-Namese in Indo-China. All these things are not only remains of the War but may sow the seeds of another World War. Of course there is much talk and clamour about 'Peace Conferences' and 'Peace Treaties' on the one hand, but at the same time there are also much whisperings and complaints about 'New Defence Lines' and 'Iron Curtains' on the other. Although the UNO has already been functioning, we have seen in it no real harmony and genuine amity but acute discord and sharp differences among the so-called 'Big Powers'. If things are allowed to go on like this, no prophet can foretell what will happen in the world of tomorrow. Nevertheless, a few things we can be sure of and say definitely.

First, the prime cause of war is the evil spirit of a combination of licentious selfishness and wanton ambition for racial superiority of certain people, such as the Hitlers, the Mussolinis, the Japanese Militarists and many others. We may call it Fascism, Nazism, Militarism, Imperialism or anything else as we like. Until this evil spirit is destroyed, there is very little hope for permanent peace. Hitler, Mussolini and the Japanese militarists were only different manifestations of this evil spirit and Fascism, Nazism, Militarism and Imperialism, only its various coats.

Secondly, all peoples have got tired of the War and nobody likes it any more. They all indeed want peace. But due to mutual fear and suspicions, certain people talk peace on the one hand and prepare for war on the other. Unless these fears and suspicions are discarded, there is little hope for real peace and war can hardly be prevented.

Thirdly, if unfortunately there is to be war again, it will be a hundred times more destructive than the last one. The cruelty of its method of killing and the wideness of its scope of destruction will be beyond our imagination. In other words, the whole human civilisation will be demolished and humanity may really come to an end.

We therefore must endeavour either separately or jointly to do the following three things:

(1) To destroy the evil spirit of a combination of licentious selfishness and wanton ambition for racial superiority of certain people.

(2) To discard mutual fear and suspicion among certain people.

(3) To try all and every means not only to avoid but to prevent war for ever.

But the problem is how to destroy this evil spirit; how to discard these fears and suspicions; and how to avoid and prevent war for ever? Politicians and statesmen may say, 'this is a political problem and its resolution must be sought from politics'. Economists and financiers may say, 'this is an economical problem and its resolution

must be sought from economics'. And our fashionable socialist friends may regard it as purely a social problem and seek the remedy from socialism. According to my humble opinion, it is fundamentally a cultural problem and we must find its resolution in culture. For culture in its broad sense covers all activities of humanity including knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society; and in its strict sense is the cultivation of the very life, spirit and soul of mankind. It is the compass as well as the pilot of the progress of human society. It gives significance to human life and distinguishes human life from that of plants and animals. It helps man to realise at the first stage the real meaning and value of life, and ultimately to reach its real goal, in which there is only eternal peace, love, joy, freedom and blessing; and without suffering of any kind, not to mention war. Until and unless this culture is universally disseminated and promoted, and most of the people, at least the majority, are really well cultured, we cannot expect them to be free from all kinds of evil spirits, to cast aside mutual suspicion and fear, and to avoid and prevent war.

Asia has been the cradle of world culture. Take one thing for instance, all the great religions of the world, such as Buddhism, Christianity, Islam, Hinduism, Jainism, Zoroastrianism, Taoism and Confuciunism, were born in this great ancient continent. Modern scholars divide the world of culture into two spheres: the 'East' and the 'West'. As it is generally understood, the 'East' means Asia and the 'West' means Europe and America. But the so-called 'Western Culture' had its origin in the Greek and the Roman, and the Greek and the Roman had their connection with Arabia and Asia Minor. It is, therefore, not all without reason to say that Western culture has had some Asian elements and origin. Anyway it had been greatly influenced first by the Hebrews and again by the Arabs. At least the great world-religion, Christianity, has given faith and hope of life to almost all the peoples of Europe and America.

Let us turn to Asia again. The Asian or Eastern culture may be again divided into four main branches at present: the Hindu, the Islamic, the Chinese and the Malayasian. Hindu culture covers almost the whole of India and spreads its influence to almost the whole of Asia. Islamic culture consists mainly of the Arabs, the Persian and the Turkish, and covers the whole of West-Asia and spreads its influence to as far as Europe and Africa. Chinese culture overshadows the whole of Eastern Asia, including China, Korea and Japan, and extends its influence to a great part of South-East Asia. The Malayasian culture is a product of the convergence, mingling and combination of the above three cultures. All these branch cultures of Asia, although different in shape and colour, are fundamentally the same in spirit. What is this fundamental spirit? It is, in very simple words, peace, love, compassion and freedom. As such, it teaches us to be always calm and selfless, not only to forget but also to give up ourselves and to think always of others, and love and sympathise with all and everybody. The very word Islam means peace and fraternity. The great Chinese saint, Confucius, taught us two words: 'Chun' and 'Shu'. 'Chun' means, in his own words, 'The man of virtue, wishing to be established himself, seeks also to establish others; wishing to enlarge himself, he seeks also to enlarge others'. 'Shu' means, also in his own words, 'What you do not want done to yourself, do not do to others'. He again exhorted us: 'Love all and endear the virtuous'. The ancient Indian sages exhorted us: 'Let him not do evil to others who desires not that sorrows should pursue himself'. Again: 'Give every one his due, hurt no one, and do unto others as you would like them to do unto you'. And again: 'Do naught to others which if done to thee would cause thee pain'. Lord Jesus Christ taught us: 'Love your enemy'; and 'Whatsoever ye would that men should do to you, do ye even so to them'. Such messages of Asian culture are too numerous to be cited here. If such a culture were imported to all people and if all people followed such noble teachings, there would be no quarrel, no dispute, no controversy of any kind; of course there would be no war at all.

In ancient times, there were very intimate and friendly relationships among all the Asian Nations. There was a great deal of cultural and religious intercourse and interchange between all the Asian peoples. They met one another very often. They greeted one another with goodwill and best wishes. They co-operated and collaborated with one another. They exchanged with one another their ideas and scholarship. They were mutually influenced, benefited and enriched by one another. They had not only benefited themselves but also blessed other people and contributed a great many of the most glorious chapters of world history by such contacts. As I have already mentioned, the Malayasian culture is a product of the convergence, mingling and combination of Hindu, Islamic and Chinese cultures. Chinese culture has been enriched by its contact with Hindu culture, specially with Buddhism. Hindu culture has been enlarged by its contact with Islamic culture. Islamic culture has in turn been enlarged and enriched by both Hindu and Chinese cultures. And all these together have given much enlightenment to the peoples of the West. Even modern science, which is the pride of Western civilisation, had really its origin in Asian culture.

But unfortunately, indeed very unfortunately, all these cultural and religious contacts, these intimate friendships and intercourses, and these cordial co-operations and collaborations among the Asian countries and peoples had somehow dwindled and died down for the last few centuries, probably on account of the vicissitudes of life and changes in circumstances. It was mainly because of this rupture of relations among us that we all Asian nations have suffered so much for hundreds of years at the cruel hand of Destiny. It is therefore absolutely necessary for us today not only to revive our old contacts and friendships but also to create new relations and open new intercourses. We must from now on unite not only politically but culturally; here I should only say culturally, to co-operate and collaborate in studying and promoting our Asian culture in order to enlighten ourselves and enlighten others, so that war may be prevented and peace maintained for ever.

But how to do this? Here is a proposed scheme and programme which may serve our purpose:

(1) To organise an All Asia Cultural Association in all the Asian countries. This Association in all the countries will be mutually regarded as Sister Associations on an absolutely equal and democratic footing. The Headquarters of this Association will be located yearly in turn in every one of the Asian countries.

(2) To organise an All Asia Cultural Conference. This Conference will be convened by the All Asia Cultural Association and will be held yearly and alternately in one of the Asian countries, in which the Headquarters of the All Asia Cultural Association is located.

(3) To establish All Asia Institutions for Asian studies in all the Asian countries.

(4) To exchange professors and students among all the Asian countries.

(5) To found All Asia Libraries and Museums in all the Asian countries.

(6) To interchange books and journals among all the Asian countries.

(7) To hold All Asia Art and Culture Exhibitions in all the Asian countries.

In conclusion, there are two points that I must make clear. First, when promoting Asian or Eastern culture, we should not have the least notion of looking down upon the European and American or Western culture, especially upon modern

Science which we all Asian peoples should study and apply most earnestly, wholeheartedly and urgently. But science, when we have learnt it, must be controlled and directed by the noble spirit and lofty ideals of our Asian or Eastern or Oriental, (as it is most commonly referred to by scholars), culture, so that it will be only rightly used to benefit people and will not be misused to make Atom bombs or any other deadly weapons to kill people and destroy civilisation. Secondly, when we all Asian peoples and Nations unite and do all these things, we must not and should not have even an iota of selfish motive. Our aim and purpose should not only be to do good to our own peoples and countries but also to work for universal enlightenment and peace, for international amity and harmony, and for human fraternity and brotherhood. In other words, it is for the salvation of the whole world and all mankind.

O, Brethren of Asia! this is our mission, our duty, our responsibility as well as our privilege. Let us come and join together and start this sacred work!

ASIAN RELATIONS

CONFERENCE

March—April 1947

CULTURE RELATIONS BETWEEN INDIA AND THE MIDDLE EAST

by

I. H. Qureshi

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GROUP D: CULTURAL PROBLEMS

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INDIAN COUNCIL OF WORLD AFFAIRS

NEW DELHI

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This paper has been submitted to the Asian Relations Conference by the author. The author alone is responsible for statements of fact or opinion in this paper.

CULTURAL RELATIONS BETWEEN INDIA AND THE MIDDLE EAST

The Middle East comprises Iran, the Arab countries, and Turkey. For the sake of convenience, it would be better to deal with them separately.

Iran : The relationship between India and the countries comprising the Iranian Plateau can be traced back to the dawn of history. The excavations in Mohenjodaro and Harappa have established beyond doubt the existence of an ancient civilisation which flourished all over North Western India and had close contacts with Mesopotamia. The discovery of a number of seals in Iraq and Sind establishes beyond doubt, at least a thriving trade relation between the two countries. Some historians think this civilisation extended all over the Iranian tableland. If this view is correct, India and Iran were culturally united even before the dawn of written history, and though historians differ about the dates, it seems that it is not possible to put these earlier civilisations later than 2200 B. C.

Then we come to the Aryan times. The Cuneiform inscriptions which relate to the Kings of MITANI, a branch of the Hittites established in a district of Asia Minor have been interpreted by some scholars to mean not only that their kings in the fifteenth and fourteenth centuries B. C. bore Aryan names, but also that they worshipped the deities of the Rig-veda—Indira, Varuna, and Mitra, and the Acvins under their Vedic title Nasatya. The evidence is not conclusive, but it cannot be rejected lightly. The Kassites, a mountain tribe from the neighbourhood of Media ruled over Babylonia for five hundred years from 1746-1180 B. C. Though the people were of a different racial stock, their princes and deities bore Aryan names. Besides Shurias (for Sun) and Marytas which seem identical with the Aryan Surya and Marutas (the wind gods) Simalia, the queen of snow mountains, bears similarity to Himalaya and Zima, the Iranian word for snow. The country of Iran, (as Persia has always called herself) has been, during the last so many centuries, predominantly of Aryans As a matter of fact the word Iran is only a variant of the word Aryan. It has yet to be determined when the Aryans occupied India and Persia, but it seems to be fairly certain that they were living in Iran in the 14th century B. C. They seem to have entered India in the 12th century B. C. The Persian of to-day is very similar in his features to the sculpture on the ancient walls of Persepolis and in spite of considerable inter mingling of races during Muslim rule is even now predominantly Aryan. Philologically Persian is closely related to Sanskrit, and this fact provides another cultural bond between ancient India and Iran.

In religion modern Iran is Muslim which creates a bond with the Muslim population of India. In ancient times, when Zoroastrianism held sway and even

before, the religions in the two lands were not unconnected. According to Dr Giles, 'while modern Hinduism is the lineal descendant, however much modified in the course of ages, of the ancient Aryan worship which we first know in the Rig-veda, the religion of the Avesta is a reform which, like other religious reforms, has been able to get rid of the old gods only by converting them into devils, the worship of whom was none the less diligent in spite of their change of title'.

Apart from tradition, there is no real evidence that after the Aryan occupation of India the Persian Empire extended into India before the days of the great Persian Emperor Cyrus (558-530 B.C) who conquered Gandharva. This geographical term in ancient Indian History generally denotes the region comprising the area between Afghanistan and the Indus. The inhabitants of this area are mentioned as Gandharis both in the Rig Veda and Atharva Veda,and Gandhara appears as a country or province from the period of the Upanishads onwards, in Sanskrit literature, in the earliest Buddhist literature and in the most ancient Indian inscriptions. It remained a Persian province for about two centuries, and after the downfall of that Empire in 331 B. C. it, together with the Persian province of India or the country of the Indus which had been added to the Empire by Darius, came under the sway of Alexander the Great. Through Gandhara and the Indian province Persia exercised an influence which affected the civilisation of North-Western India. The historical inscriptions of Darius are found at Bistun, Persepolis and Naqshi-Rustam ; some of these mention the peoples under the suzerainty of Persia. Another source of information is Ctesias of Cnidus who resided at the Persian court for 17 years (415-398 B. C.) as physician during the reigns of Darius II (424-407 B. C.) and Artaxerxes Mnemon (404-358 B. C). He wrote accounts both of Persia and India of which there are extant fragments preserved by later writers.

Although it is not possible to determine precisely the extent of the Indian province added by Darius to the Persian Empire, there is evidence to show that it included the whole of Sind and the Western Punjab. It is a matter of common knowledge that Indian soldiers fought in the army led by Xerxes against Greece. These provinces formed part of the twentieth satrapy of the Persian Empire which was considered to be the richest and the most populous in the Empire and paid about one-third of its total revenue. The Satrapy, however, was lost before Alexander's invasion of India and a number of small chieftains divided the whole area into small principalities. As a result of the breakdown of the Persian Empire after the invasion of Alexander, a number of Greek Kingdoms were formed, the most important of which was Bactria. Every student of Indian History knows the relations existing between Seleucus and Chandragupta Maurya who was able to annex considerable area ruled by the Greek generals to his Indian Empire.

Next we find a number of foreign settlements in the regions now mostly included in the Bombay Presidency. The earliest foreign ruler in this area whose name has been preserved was the Satrap Bhumaka Ksharata who was probably subordinate to the Indo-Parthian King Gondopharnes. His exact date is not known but he may be assigned to the 1st century A. D. The next Satrap is Nahapana who may or may not have succeeded Ksharata. He certainly was a Persian, as his name shows. He assumed the title of Mahakshatrapa which probably denoted his dependence on some Northern power. His dominions comprised southern Rajputana, Western Ghats and a part of Kathiawar. These satraps were uprooted by Raja Gautamiputra Sri Satakarni, generally known to historians as the Andhra King, 23rd, who came to the throne about A. D. 109. There was another satrap dynasty of the Chashtanas originally settled at Ujjain in Malwa. This was extirpated by Pulumaya I, Andhra. The Persian power once again developed under the Arsakidan Kings. Mithradates I (171-136) annexed to his dominions the area between the Indus and the Jhelum. There has been considerable controversy regarding the chronology and dominions of various Indo-Parthian dynasties ruling in western India; the important factor is that they were deeply influenced by the Parthian Empire and its tradition. The most important of these Indo-Parthian kings was Gondopharnes with whom, perhaps wrongly, is associated the legend of St. Thomas. The Indo-Parthian power came to an end only with the yuehchi invasion from the North West. A new dynasty was established which gave to us the celebrated Emperor Kanishka under whom there blossomed religious and cultural life and the famous Gandhara school of sculpture, with its obvious traces of deep Greek influence. When this dynasty came to an end, there probably took place another Persian invasion under Bahram (Varabran II), but there is no record of such an invasion. In 226 two great dynasties, the Kushans in the North and the Andhras in the South disappear, but this may be a mere coincidence. This period is also marked by a remarkable revival of Persian influence, as is proved by numismatic data. From 320 to 455 there ruled in India the famous Gupta dynasty under whom India reached a very high level of culture.

As early as the Mauryan empire we find traces of Persian influence in architectural designs; for instance, the well known lion capitals of some Asokan pillars seem to have been copied from Persian models. Even greater evidence of Persian influence is found in a close study of coins. The well known caves at Ajanta and Ellora show traces of Persian influence. In one of the caves at Ajanta there is a painting which records the presence of contacts with Persia. It is known as the 'Persian picture' and depicts a scene in India in which all the figures have Persian features and wear Persian clothes. The Persian ruins of Persepolis and Ellora bear a similarity which is only too apparent. The dukhmahs or the sealed tombs of the Persian Emperors carved out in solid rock in the hill side, remind the visitor strongly of the famous Indian caves. The tomb is a chamber; its doors resemble the orthodox trabeate Hindu door. The

great hall of audience in the palace at Persepolis seems to have inspired the great Chaitya at Sanchi and some of the halls at Ellora. The resemblance in the plan is remarkable. It is fairly certain that the interchange of architectural technique has put into the more enduring stone the cultural contact which was influencing the minds of the two peoples.

The weakening of Persia as the result of the Arab conquest resulted in her becoming more receptive to Saracenic and Byzantine influences. The Arabs in their quest of knowledge looked both east and westwards, and their conquest of Sind brought them to the very ancient civilisation of India. There are many who are inclined to minimise the importance of this conquest to just on episode and of little importance to the world, though it has become a by-word with the students of Indian history. On the contrary, it was one of the most significant events that have happened in the history of the world, for it was here that the Arabs came into contact with Hindu learning which they assimilated, modified and adapted to their needs and then passed it on to the West. The Arabs first learnt the method of notation in Sind and it was through them that it passed on to Europe and the rest of the world. What the Arabs took from Rome, Byzantium, Egypt and Sind, they passed on to their very apt pupils—the Persians. So great was this Indian influence that we find in the 7th and 8th centuries A. D. a school of painting in western Persia and Iraq wherein are introduced dark Indian figures in the dress of Buddhist monks and nuns. The Abbasid court at Baghdad was the cultural centre of Islam, and here the Persians slowly pushed the Arabs out of prominence. Here too were highly valued Indian mathematics, astronomy, politics, philosophy and even the prohibited science of astrology. The famous Barmecides were of Buddhist origin and, therefore, deeply influenced by the Indian tradition of culture.

In about 1,000 A.D. comes the period of the conquest of India by the Muslims and their gradual expansion towards the South. Every Muslim Sultan claimed to be a lieutenant of the Abbasid Caliphs at Baghdad as long as the Caliphs ruled, and many of them were properly awarded letters patent and robes conferring on them the insignia of royalty. There are records of missions having been received from the Abbasid court, and naturally this resulted in continuous interchange of ideas. The upper structure of the administration which the Muslim rulers established in India was an imitation of the Abbasid system which in itself had absorbed a great many features of the old Sassanid tradition. It was a Persian refugee who had been a minister at Baghdad and who left the Caliph after a quarrel, that put the Indian Muslim administration on a sound basis. These Turkish rulers adopted Persian as the court language, for by now the Persian language had become the polite and cultural language of the Eastern Muslim world and was adopted by the courts of Eastern Islam. During the 13th century A.D. the whole of western Asia was run over by the Mongols under Chenghiz Khan. These Mongols were uncivilised heathens, and under their barbaric sway, the fair lands of Iran and Asia minor were

reduced to the greatest misery ; but the greatest of the calamities was the death blow they dealt to culture and civilisation which have never fully recovered again. During the period of this calamity a large number of learned Persians took refuge at the court of Delhi, so that there were no less than 13 quarters assigned in the city to these emigres. They brought to the court of Delhi all that they had been able to save from the catastrophe. The result of this cultural contact was that India herself produced some of the greatest Persian poets. There are very few as great as Amir Khuaraw in the history of Persian literature, and this Amir Khusraw was born and educated in India. He lived the whole life in India. His friend Hasan also was an Indian by birth.

During the days of the Mongol domination, three great religions tried to convert these barbarians whose empire stretched from China to the Mediterranean. These religions were Buddhism, Christianity and Islam. For a while under one of the Qaans Buddhism was the favourite, and Buddhist monasteries sprang up almost everywhere in his vast dominions. For about a century there was a chain of Buddhist monasteries throughout Northern Persia ; Turkestan was the meeting place of four cultures—Persian or Islamic, Chinese or Buddhist, Indian or Hindu, Greek or Christian. Of course these contacts did not come into being all at once, they had existed even before and slowly acted and reacted upon one another. The real extent of this mingling is being realised only gradually and slowly—thanks to discoveries of European scholars in Central Asia. At last Islam drove out Buddnism, and these Mongols, at least nominally, became Muslims. One of their descendants, Timur brought devastation to the home and hearth of many an Indian. The harm he did to the cultural growth of India has yet to be realised, but it was his descendant, Babar who brought about the birth of a new age in India. It was Babar's love of brooks and pleasant villas which revived the aesthatic taste for beautiful houses and gardens. His son, Humayun brought with him two painters from Tabriz who laid the foundation of the Mughul school of painting, which is still held in high esteem. Under Akbar, architecture and painting made great strides. In the former, Persian influence was persistent, though subdued, but in painting it was supreme. The Mughuls had catholic tastes and under them various experiments in architecture were made ranging from Fathpur Sikri to Humayun's tomb in Delhi. Ultimately with Shah Jahan, that master builder who produced the Taj and the Jumma Masjid, the Persian influence became dominant. Under Akbar, poetry also made progress with the result that the court at Delhi became the rendezvous of notable poets. Naziri, Faidi, 'Urfi and Saib shone here, and their exquisite poetry is an undying legacy of that glorious past. These influences continued strong as long as the Mughul rule lasted. Luckily with the downfall of the Mughul Empire, the Persian influence did not come to an end. Even before the fall of Mughuls, the provincial dynasties of the Deccan and Bengal had courted the favour of famous Persian poets. All but the famous Hafiz came to India. If he had not been afflicted by sea sickness during the first few hours of his

journey to India, he would probably have made the whole voyage. After the downfall of the Mughuls the provincial dynasty of Oudh was the stronghold of Persian influence.

But, during these centuries a great change had been taking place. Gradually emerged a new language as a result of the contact between Muslim and Hindu cultures—the Urdu language. This language kept the grammar and structure of the Prakrit and borrowed its vocabulary from Persian, Arabic and Turkish. To-day a very large number of words in that language are Persian, more often used, in the sense that they convey in Iran and sometimes they have been Indianised and therefore their meaning have changed. Persian has deeply influenced Urdu poetry, for it has borrowed not only the very metres and forms of Persian poetry, but also its feeling and imagination. That is one of the reasons why Urdu poetry has become so highly conventional in expression.

Add to these a large number of mannerisms, little points of etiquette and ceremonies, certain influences in dress and folklore, which show the extent of Persian influence. Even to-day, though all direct contact ceased with the downfall of the Kingdom of Oudh, the ceremonies which one sees in the Indian states, both Hindu and Muslim, is a living symbol of Persian culture. The amount of similarity that one notices even to-day in the ideas and ceremonies of Iran and those of the Indian Muslim, in spite of the rapid westernisation of Iran, is amazing; but these similarities are gradually disappearing owing to the two countries drifting far apart. For some time the contact between the two lands was meagre; a few traders and pilgrims, consular servants and employees of the Anglo-Iranian Oil Company being the only links. But they were isolated individuals; the only institution which took some interest was Viswa Bharati at Shanti Niketan, where for some time a famous Persian poet and litterateur was a professor of Persian literature and culture. In the early thirties Dr. Tagore was invited to Iran by the state and accorded a wonderful reception. At the millenary of Firdausi, learned scholars were invited from India. Recently the Iranian cultural mission came to India and visited a large number of institutions. As a result, the Indo-Iranian Culture Society was established at Teheran. The Government of India set up an Indo-Iranian Standing Committee and the nucleus of a Delhi counterpart of the Teheran Society was formed, which, however, has made little progress. The Indo-Iranian Society of Calcutta, however, is doing good work. A number of Iranian students are studying in India and recently the Iranian Government has awarded scholarships to Indian students for the higher studies at Teheran. This, one hopes, is only the beginning of a revival of the great traditions of cultural relations between India and Iran.

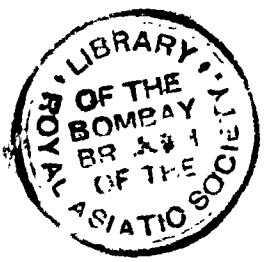
Arab countries : The cultural relations between Egypt and India date back to pre-historic days. The Dravidians were a sea faring race and philology establishes beyond doubt, the fact that they had contacts with the Mediterranean

areas, including Egypt. The commercial relations between ancient India and Egypt as well as Western Asia are mentioned in the Bible. Philology confirms the record. The contact with 'Iraq dates back to the early Mesopotamian civilisation. The Arabs had trade settlements in India before the birth of Muhammad, and when Islam awakened in them their latent talents, their commercial activity made rapid progress. The Arab traders brought prosperity to the lands where they carried their commerce, and, therefore, they were welcomed in Indian courts. They were respected and were given great facilities including the rights of free worship, and of communal organisation for religious, social and legal purposes. They soon came to occupy a position of importance and were trusted by rulers even to the extent of being appointed to important administrative posts. They were the great carriers of Indian trade, and as they had commercial dealings with China and other Far Eastern areas, their vessels thronge the Indian ports and their settlements grew in prosperity and importance. The importance of South India in this connection can be guaged from the fact that the area comprising its busiest ports was called Ma'bar, the crossing or the Highway. South India has even now a colony of their descendents, the Moplahs. Recent research has established the great influence which these peaceful traders exercised on the intellectual trends in India. Inspired by the new light they had received, the Arabs became great missionaries and the traders were themselves the dissiminators of their new acquired knowledge and ideals. This was reinforced by religious teachers who preached their gospel to the Muslims and non-Muslims alike. It is possible to trace their influence in the subsequent development of Hindu thought and philosophy.

It was in defence of their commerce that the Arabs invaded and conquered Sind, which had such far reaching results in the development of human knowledge. The Sultans of Delhi owed allegiance to the Abbasid caliphs of Baghdad. After the end of the Baghdad Caliphate, Muhammad bin Tughluq established relations with the Abbasid caliphs of Egypt. In his and the succeeding reigns a number of embassies came from the Egyptian Abbasids to Delhi. The Masalik-ul-Absar and the Subh-u'l-asba both contain material which, besides throwing light on Muhammad bin Tughluq's reign, proves that commercial and cultural ties between Egypt and India were strong.

Contacts with Arabia were kept up through Islam, and the Arabic language and Arabic sciences were assiduously learnt by Muslim students of India. The large number of colleges and schools established by Muslim rulers were the centres of the radiation of Arab influence and even today there is great enthusiasm for the preservation and perpetuation of the Arab elements of Muslim culture among the Muslims of India. Ever since the beginning of Islam in India large numbers of pilgrims have visited the Muslim holy land of Hejaz and have maintained ties of brotherhood and cultural contacts with Arabia. In so far as the Muslims have influenced Indian culture and are still doing so, the cultural contact with Arabia is real and alive.

Turkey : All the Muslim rulers of India, with a few exceptions, were of Turkish origin and a large number of Turkish families settled down in India. These facts had a deep influence on Indian culture, and many a word in the Urdu language is derived from Turkish. With the establishment of the Ottoman rule over the Hejaz, the contacts with Indian Muslims grew stronger owing to the large number of pilgrims visiting that land. During the Tripolitan and Balkan Wars, the Indian Muslims took a keen interest in the Turkish efforts to resist the onslaught on Ottoman territories. The visit of an Indian medical mission during the Balkan War strengthened these ties, which resulted in the Khilafat Movement after Turkey's defeat in the First World War. The main object of this movement was to bring pressure on the British Government to desist from pursuing an anti-Turkish policy. The news of the rise of the Nationalist Movement in Turkey, Mustafa Kemal's victories against the Greeks and Turkey's diplomatic triumph at Chanak and Lausanne roused great enthusiasm. The bonds of friendly feelings for the Turks grew stronger with the recent visit of the Turkish journalists to India.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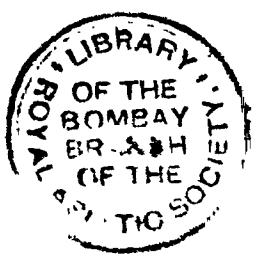
ASIAN RELATIONS

CONFERENCE

March—April 1947

SCIENTIFIC RESEARCH IN ASIA



by

C. V. Raman

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GROUP D: CULTURAL PROBLEMS

TOPIC VII: CULTURAL PROBLEMS

S.R.T. Kelkar

INDIAN COUNCIL OF WORLD AFFAIRS

NEW DELHI

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SCIENTIFIC RESEARCH IN ASIA

The Eastern peoples have in the past been the torch-bearers of knowledge, both in the abstract and in relation to the practical arts of life. The magnificient contributions made by them to the development of human civilisation have been revealed by the studies of the archeologists and historians and are familiar knowledge. Little practical purpose would therefore be served by attempting to survey them here individually in detail or even to estimate the range and importance of the fundamental discoveries in science contributed by Asia in the past to the sum total of human knowledge. A reference may, however, be appropriately made to the great and wonderful achievements of the Chinese people in the course of their long history in every field of learning, culture and practical achievement. During the Middle ages also, the Arabs and the Moslem people generally represented the spear-head of progress in scientific knowledge and its practical utilisation for promoting human welfare and happiness. The full story of India's contributions to scientific knowledge in the course of her long and troubled history has yet to be written, but enough is known for us to be sure that intellectual endeavour on the highest plane was one of her constant preoccupations. Of great interest, in particular, are the evidences which are to hand of the existence of intellectual contacts between the peoples inhabiting the different parts of Asia, and of the stimulating influence of such contacts on their common activities.

It is not easy to present a completely unbiased account of the results of the impact of European civilisation during modern times on the culture of the Asian peoples and on their attitude to human knowledge generally and to scientific knowledge in particular. It would be easy to enlarge on the thesis that the result of such impact was to stimulate their intellectual activity. This was conspicuously the case with Japan and to a lesser extent in other parts of Asia. On the other hand, it cannot be overlooked that the impact also in many cases resulted in distinctly unhealthy consequences—a feeling of exaggerated respect or fear of the power placed by scientific advance in the hands of the European people and a feeling of hopelessness or despondency induced thereby in their own minds. Signs are, however, not wanting that feelings of this kind are wearing out and are being replaced by a new sense of confidence of the Asian peoples in their ability to hold their own with the other nations of the earth in the quest for knowledge and in its practical applications.

Scientific research is one item out of many in the list of cultural problems which in their turn form only one of the many topics envisaged for discussion at the Inter-Asian Conference. It appears therefore desirable to emphasise the fundamental importance of scientific research in relation to the whole picture of the renaissance of the Asian peoples. Scientific research is first and foremost an expression of the resurgence of the human spirit in its search for self-expression. It represents the response of the mind of man to the marvellous and ever-changing panaroma of Nature. More and more also, it is being realised that the attitude of mind and spirit represented by science is a proper substitute for the feelings of fear and superstition bred by ignorance in man. Vast powers are placed in the hands of man by successful research which opens up a vista of possibilities for its beneficient application in the relief of the fundamental ills of humanity, namely hunger, poverty and disease. This fact makes the provision of adequate resources for scientific research, a fundamental duty of the social organisation and of the State. Indeed, if the Asian people are to hold their own amongst the other peoples of the earth, they cannot afford to be merely passive onlookers when the rest of the world is marching forward to fresh triumphs.

Scientific research is often divided into two classes, fundamental or pure research, and practical or applied research. This classification is not a satisfactory one, for

when research is undertaken with a practical aim, it is often discovered that progress is not possible for lack of some essential item of fundamental knowledge. Per contra, it happens very frequently, that research undertaken without any ulterior motive yields results of the highest practical importance. A more satisfactory division of scientific research is into the categories of research organised and carried on by individual effort, and research organised and carried on by State. It is true that a State organisation necessarily has to rely on individuals to do its work, while individuals have also frequently to rely on State assistance. Nevertheless, the distinction has a real significance. There are kinds of work where individual initiative and originality are the all-important factors and without which it cannot proceed forward. On the other hand, there are lines of work which cannot progress at all except on the scale made possible by State organisation. The two kinds of research may often be helpful to each other and some kind of correlation between them may be useful and even necessary. Nevertheless, the distinction we have made is a useful one, and particularly so when we are discussing co-operation between different States geographically adjacent to each other.

Individual workers or small groups of individual workers are mostly to be found in the Universities and in the college laboratories, and also in private or State-aided institutions. They often suffer from lack of materials, lack of information and lack of personal contacts with a wider circle of workers. While many of these lacunae could be filled without going beyond the borders of the country in which they work, nevertheless, it would be a great fillip to scientific research if the workers can go wider afield for their material, for their information and for their personal contacts. In all these respects, closer contacts between the Asian countries could be of very great benefit. We shall detail below some illustrative examples.

Materials Present-day research in physics often demands use of crystals and crystalline minerals of various kinds, often only obtainable with great difficulty, while perfect specimens are exceedingly rare. Similarly, a chemist investigating plant products is often deeply concerned with getting specimens of the same species of plant from different areas and also specimens of similar species growing elsewhere. A geologist is often interested in getting fossils or rock-specimens from adjacent areas to investigate their correlation. Botanists and zoologists are frequently interested in the flora and fauna of countries adjacent to their own. The establishment of machinery for making such materials freely available to workers in Asian countries should prove extremely fruitful for the progress of science.

Information Data or other specific items of knowledge of special importance to an investigation very frequently do not find publication in the literature, or often not until long after they have ceased to be of interest or use. Some kind of organisation for the greater and efficient spread of useful scientific information regarding material finds and other items of value should be arranged. This would stimulate research and suggest fruitful lines of work.

Personal contacts It is the experience of scientific workers all over the world that periodic meetings and discussions on subjects of common interest are extraordinarily fruitful and stimulating. It is a regrettable fact that up till now the opportunities for such contacts between workers in different Asian countries have been far and few between, and that we have in the past looked towards Europe and America and not to the Asian countries for inspiration and guidance in matters of scientific progress. This attitude of mind requires a radical change. Indeed, there is reason to think that a fresh outlook on this matter will open up a new era of scientific advancement in the Asian lands.

The kind of co-operation that is needed between individual scientific workers in different countries has already been sketched out. There are several sciences whose all-round development requires the putting together of the results of work in

different countries and for which appropriate international or inter-regional organisations are necessary. Often, it is possible and desirable to link up inter-regional organisations with international ones. Till now, most of the international organisations have had their headquarters in Europe or America, and for various reasons, Asian countries have not taken their due share in framing the policies and programmes of such organisations. Many Asian countries are still under-developed in scientific matters and have therefore common problems as regards development. Regional organisations are therefore necessary to prepare common policies and programmes and compare experiences. Let us consider some of the sciences for which international organisation is necessary.

Two of the most active and fruitful International Scientific Unions are the International Astronomical Union and the International Union of Geodesy and Geophysics. Recently under the auspices of the National Research Council of the USA at a meeting held in Washington in June 1946 a co-ordinated programme for scientific research for the Pacific islands and seas was formulated. They embraced the following Sciences :—

(1) Anthropological Sciences

(2) Earth Sciences

(3) Oceanography and Meteorology

(4) Plant Sciences

(5) Public Health and Medicine

(6) Zoological Sciences

This list seems to be comprehensive and well thought out and we can with advantage adopt it for working out plans of co-operation among Asian countries.

The immediate co-operative effort among Asian countries is required in the following directions :—

(a) Opening and development of communication systems which have broken down during the war.

(b) Starting of surface and upper air observatories in areas where they have not existed before or have gone out of existence. Extension of commercial aviation makes this an urgent necessity.

(c) Starting of magnetic observatories and surveys in unrepresented land and sea areas so as to make the magnetic maps correct and keep them up-to-date.

(d) Co-operation between the geodetic, zoological and botanical surveys of different countries so that their work can be suitably linked up.

(e) Establishment of seismological observatories to study the seismology of the orogenic belts which extend across the Continent.

(f) Development of co-operative national organisations to combat pests and diseases affecting men, animals and plants.

The formation of Pan-Asian Scientific Unions which could later be affiliated to the respective International Unions will probably help in organising co-operative effort in different countries.

ASIAN RELATIONS

CONFERENCE

March—April 1947

EDUCATION IN ASIA

by

K. G. Saiyidain

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GROUP D: CULTURAL PROBLEMS

TOPIC VII: CULTURAL PROBLEMS

S.R. Tikekar.

INDIAN COUNCIL OF WORLD AFFAIRS

NEW DELHI

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EDUCATION IN ASIA

SECTION I

THE SPIRIT OF ASIAN CULTURE

The convening of this Conference at Delhi to discuss problems of common interest in the domain of culture and other related fields is a significant event in the history of Asia. Politics and economics have always tended, unfortunately, to divide peoples from one another, because they deal with issues where clash of interests is more obvious than their community. Culture, on the other hand belongs to the realm of the mind and the spirit, where people of different lands and circumstances can meet on common ground to explore its riches which increase, rather than decrease, by sharing. It is true that the resources of culture, too, have been often pressed into the service of unworthy ends and have contributed to conflict and discord. But, whenever this has been done, men have sinned not only against the light that was in them but also against the 'true spirit' of culture. This point is peculiarly relevant to the issues that we have to discuss because it not only defines the nature of culture in general—which includes Arts, Sciences, Literature, Religion, Philosophy and the other riches of the mind—but also indicates the special genius and quality of Asian culture as a whole.

The most characteristic contributions made by Asian culture, through its long and continuous history, have never been destructive or calculated to promote disharmony or mutual discord. All the great religions of the world—Hinduism, Budhism, Christianity, Islam had their original home in Asia and, whatever may have happened in their history from time to time, they were essentially movements for the *unification* of peoples and for bringing them together on the basis of certain spiritual truths and values. In the fields of Arts and Crafts, Literature and Philosophy they have tended, on the whole, to stress the significance of Creativity, Peace and the spirit of Humanity rather than wealth and power and material domination. They have sought the creative rather than the possessive happiness as the goal of life. Even in Science they have been concerned more with the pursuit of truth than with the commercial or sanguinary applications of scientific knowledge. Is it not a well-known fact that gunpowder, which was invented in China, was used there only for the harmless display of fireworks and it was left to others to use it for projecting pieces of lead at terrific speed into the bodies of human beings ? And, of course the great scientific triumph of preparing the Atom Bomb did not fall to the lot of any Asian nation. In fact, the roll of the really great men of Asia—men who are held in universal affection and esteem—would read like a list of names which could do honour to the Nobel Peace Prize!

Let us try and disentangle some of the significant characteristics of Asian culture so that we may be in a position to visualise the part that education should play in its appraisal, reconstruction and transmission. The following points are suggested as worthy of consideration :

(*a*) It is usually said that the East is spiritual while the West is material. This is a very superficial antithesis and it does damage both to the facts of history, and the nature of Culture. The Eastern nations have, in the past, built flourishing and prosperous civilisations and the West has made many valuable contributions in the field of ethical and spiritual values, and of social services which are one of their practical manifestations. It is, however, true that the East has, on the whole, been anxious to stress the supremacy of the spirit and, generally speaking, the West has concentrated more and more—particularly since the Industrial Revolution—on the development of 'Power' to the detriment of what has been described, in the East, as 'Vision'. This has resulted in a divorce between Power and Vision which has been detrimental for both—depriving Eastern cultures of dynamism and effectiveness of organisation and injecting into Western cultures the germs of self-destruction which tend to disrupt it through the generation of internal conflicts and discords based on greed, selfishness and exploitation. In the words of a great modern poet of India, addressed to the nations of the West, in the early decades of this century :

'Your culture will commit suicide with its own dagger; a nest perched on a fragile branch is destined to be unstable !'

And who dare say to-day that he was exaggerating things ?

(*b*) A genuine and dynamic Culture must, therefore try to reconcile these material and cultural values into an integral unity and build the fabric of a spiritual life on a just and rational material foundation. We of the East cannot afford to relax our hold on the values of the spirit. But we must realise afresh - as we are, indeed, beginning to do - that the conquest of the world of matter which is the special province of Science, is part of every people's great potential heritage. And no nation can become really great and powerful which does not set about this campaign of conquest in a systematic manner, not indeed to the detriment of cultural and spiritual values but to make their attainment possible through the widening and deepening of man's powers and opportunities. The recent movements of Socialism and Communism are important not because they make better planned production possible and thus increase the quantity of goods, but because they hold the promise of securing better Social Justice and making a more equitable sharing of material and cultural goods possible, without which the genuine life of the mind remains nothing but a vague and remote

aspiration for the masses of people. Hence our Education—as indeed all our social planning and reconstruction—must be inspired by the supreme objective of achieving a just, rational and humane social order.

(*c*) We should, therefore, be prepared to learn from the West a good deal of its science and technique and its industrial organisation. There is nothing objectionable in this give-and-take in the field of knowledge and science and the attempts that are being made at present to develop great scientific and industrial projects in India, China and other countries are to be welcomed. But it is essential that we should assimilate and make our own, what we have borrowed and weave it into the texture of our national life and culture. A slavish imitation of the externals of Western civilisation and culture—in fact, even of its inner spirit—is an enervating process. In the recent past, the East has passed through the stage of such crude imitation. Dazzled by the material prosperity and political power of the Western nations, many people had come to regard the blind following of the West in dress, speech, manners and activities of every equal day life as the hall-mark of being civilised. Since then we have experienced a sharp revulsion against that phase and have become more actually self-conscious as nations. So one need not anticipate the recrudescence of these manifestations of the inferiority complex. But there is a danger of a more subtle permeation of the same spirit if we are led to follow, uncritically, the economic and social planning of these countries without either profiting from their failures or taking our special circumstances into account. American Capitalism and Democracy—if these two can go together—British Socialism and Monarchy—which do seem, somehow, to go together—Russian Communism and Atheism—which, for some inscrutable reason, have come to be regarded as inseparable—may all have something to be said for them in their own milieu. But we cannot afford to borrow any of these 'panaceas' off-hand; we have to suffer our own growing pains. We must profit from the best that the West has to offer—its democratic experiments, its practical humanism, its social services, its scientific approach to industry, its improved standards of living. But we should not be prepared to barter, even for these precious gifts, that which gives distinctive meaning to human life—a dedication to the great ideals of Individuality, Peace and the Freedom of the Spirit.

(*d*) Visualised in the context of our special Culture, Education should derive its sustenance from the Asian soil and should be responsive to the dynamic urges of its national and social environment as well as its spiritual aspirations. This naturally postulates a comprehensive concept of Education which should include within it elements derived

from vocational and economic life, from creative Arts, from Literature and the Humanities, from the quickening dynamism of Science and the fundamental life-giving values represented by Religion in its finest sense. These are not just high-sounding words—Arts, Sciences, Humanities, Religion—but are realities woven into the very texture of the 'good life' and, unless they become the inspiration of the educational system, it will remain lifeless and formal. It is for this Conference and teachers in all the countries of Asia to consider how they can be integrated properly into our total educational pattern.

SECTION II

THE COMPARATIVE POSITION OF ASIA IN THE FIELD OF EDUCATION

The problem of Education is not, however, merely one of defining its proper concept and philosophy ; it has to deal with many practical and pressing issues of technique and organisation. None of them, however, is so urgent and crucial as the menace of the widespread Ignorance and Illiteracy which envelope large parts of this ancient and civilised continent in mental darkness. We must address ourselves, with a sense of desperate urgency, to the task of the total liquidation of illiteracy and provide for the purpose, within the shortest possible time, a system of *Basic* or *Fundamental Education*, covering both Primary and Adult stages, which would be practically universal in its scope. A study of the comparative statistics of literacy in the different parts of the world brings out the depressing fact that, barring Africa, Asia is the most backward continent from the point of view of literacy and mass education. While exact statistics are not available for the whole world the following figures, taken from fairly authoritative sources, may be regarded as reasonably correct for the purpose of revealing the nature of the situation that we have to face and the tremendous leeway that we have to make up.

1 *Europe*

(*a*) Countries of Northern Europe, like Denmark, Norway, Sweden, Finland, Netherlands, as well as Great Britain, Germany and Switzerland are practically 100% literate.

(*b*) The countries of Southern Europe have a much lower percentage of literacy as revealed by the following figures. Note, however, that even here, literacy does not fall much below 50% :

Italy	Spain	Portugal	Bulgaria
73%	54%	46%	45%

2 *America*

(*a*) USA has an over-all literacy of 97%.

[This includes American Negroes (84%), foreign-born Americans (90%) and 'white' Americans (98·5%).]

(*b*) Canada has a literacy of 96·5%.

(*c*) Latin-America is comparatively very backward, its over-all literacy being computed at about 30%.

[This includes Argentine (87%), Mexico (38%), Peru (42%), Brazil (30%), 'Indians' (20%).]

3 *Australia and New Zealand* have a literacy as high as 95%.

4 *Africa* has the lowest literacy rate, ranging in different regions from 2% to 10%.

In South Africa, where the percentage of literacy is considerably higher, the Bantus are 12% literate.

5 *Asia*

While exact figures are not available. it has been estimated that the over-all literacy ranges between 10% to 20%.

(*a*) The only country in Asia which can claim a practically universal literacy is Japan. But a recent survey indicates that the Japanese criterion of literacy is a knowledge of 400 words. Even then there can be no doubt that, from this point of view, the Japanese people are far and away the most advanced in Asia.

(*b*) In other countries the situation is really alarming as revealed by the following figures which give the percentages of *illiteracy* in order to stress the magnitude of the problem :

India	85%
China	80%
Siam	52%
Indonesia	95%
Middle-East Countries—Iran, Afghanistan, Iraq, etc.	about 90%.

Thus, in this great continent, with all its cultural traditions and intellectual achievements, literacy is the exception and illiteracy the rule and the educationists have to tackle a problem which is staggering in its magnitude. But it has to be faced courageously and resolutely ; there is no other way out of the impasse, unless we are willing to accept a position of permanent inferiority in the comity of nations.

Section III

SOME RECENT EFFORTS TO DEAL WITH THE ILLITERACY

It is for the delegates of different countries to give a correct and authoritative survey of what is being done in their respective lands. The following brief and sketchy remarks—which are subject to correction—are meant to show that there is an acute and growing awareness of the existing needs and steps are being taken, though they are hardly adequate, to meet them.

(*a*) *China*

China has achieved the remarkable feat of carrying on an educational campaign right through the terrible war with Japan and the Civil War in which she has been plunged during the last 10 years. She has organised a campaign of 'People's Education' which includes primary education for children between the ages of 6 and 12, and Adult Education in 'People's Schools' and 'Central Schools' for adults between the ages of 15 and 45. The immediate objective is to provide primary education for 10% and Adult Education for 35% of the population. A good deal of the programme, chalked out, has been actually carried out as scheduled with the gratifying result, that, in some regions, the number of schools and scholars has risen by above 75% of that in 1939, and educational expenditure has been nearly doubled. Given peace, China should be able to go ahead at a much greater pace.

(*b*) *South East Asia*

In this region also, there is a growing and impatient demand for education but the supply falls far short of the demand. During the years 1934-39, the number of children at school is reported as showing a marked increase. But progress in literacy is seriously hampered by the economic factor which includes not only lack of financial resources but the exploitation of child labour by parents and employees, which either keeps the children away from school altogether or takes them away from school too soon. This economic deterrent is operative in all countries and represents a common problem which we all have to face before any big educational schemes can get under way successfully.

(*c*) *Middle East Countries*

All these countries suffer more or less from certain common handicaps which not only stand in the way of rapid educational progress but also arrest all plans of social reconstruction. They are mainly politics—economic, foreign domination or control, existence of feudal institutions, small land holdings, lack of industrialisation, bad communications, poverty and ill-health. All these factors have reduced the life of a large majority to the level of a hard and primitive struggle for bare existence and induced a feeling of apathy towards wider cultural values.

This is obviously not the fault of the masses themselves but of the conditions in which they are condemned to live less than fully human lives. It is true that, in higher education, some of these countries can make a proud showing. But here we are concerned mainly with the impact of education on the masses, and in this field the situation is really very unsatisfactory. In some countries efforts are being made to expedite the spread of Primary and Adult Education and relate them more closely to the needs of community life. But this is no more than merely scratching the surface of the problem. A realistic approach would demand a radical reconstruction of the entire social order on a just, rational and progressive basis in which educational reform will be both an operative factor and an ultimate consequence.

(*d*) *India*

Mass education is primarily a rural problem in India because more than 85% of the Indian population lives in villages and is dependent on Agriculture and allied pursuits. This determines the nature and special problems of Primary as well as Adult Education. As free, universal and compulsory education has not so far been introduced, there is a high incidence of 'wastage' which has been computed at 80%, i.e., for every 100 children who join class I only about 20 manage to reach class IV and have thus the chance of acquiring bare literacy. The others fall by the roadside, as it were, and the time and money spent on them is practically wasted. Incidentally, this wastage is not confined to India; it occurs in an almost equal measure in many other countries of Asia—notably in the south-eastern countries like Siam, Indo-China, Indonesia and the Muslim countries of the Middle East. This cannot be eliminated till there is a much greater educational consciousness and an effective system of compulsion is instituted.

In the past few decades, educational reform in India has been mainly confined to significant but small scale experiments for improving the type of education provided. This has in the main, been too formal, academic and divorced from the real life and culture of the people. Institutions, like Shantiniketan at Bolpur and Jamia Millia at Delhi represent this experimental tendency. More recently, a scheme of 'Basic National Education' has been formulated for tackling the problem of illiteracy in rural areas through a system of free, universal and compulsory, craft-centred education, closely linked to the basic occupations of the locality and the general life of the community. More recently, the Central Advisory Board of Education has drawn up a 'Post-War Educational Development Plan' which attempts, for the first time, to survey the educational situation in the country, as a whole, and proposes the establishment of a comprehensive system of education ranging from the Nursery School to the University and Adult Education at

different levels. The object is to give to India educational facilities of the same amplitude as have been available to Western countries for decades. The scheme is yet on paper but it has received public as well as Government approval and has already given a new orientation to the thinking of educational administrators. They cannot now rest content with petty, piecemeal changes but have to deal with the problem on a new basis. The new policy demands a much more vigorous and imaginative approach—better paid and better qualified teachers, adequate buildings and equipment, greater attention to children's physical, intellectual and social needs and, consequently, much more funds than conservative keepers of the Finance have ever dreamed of in the past. It also implies a new outlook, aiming at the establishment of equality of educational opportunity and breaking down the vicious class system which is as objectionable in the educational, as in the social, field. It rejects the older theory of 'filteration' of education from the top to bottom and seeks to build the educational structure as a broadbased rather than an inverted 'pyramid' so as to ensure the fullest development of all the talent available in the country. If this scheme is properly implemented India will be on the high road to an educational renaissance.

SECTION IV

THE DISSEMINATION OF CULTURE

In the preceding section, special stress has been laid on the liquidation of illiteracy not because of any confusion of literacy with education or culture but because, under the conditions of modern life, dominated by Industrialism and (one hopes) by Democracy, literacy has become a gateway to technical efficiency as well as effective citizenship. We realise that Education is much wider than literacy and culture wider than education, and, generally speaking, we in the East have not committed the great intellectual and moral sin of rating the lesser above the greater. In our comprehensive educational programme, we must provide not only for Primary Education and Adult Education at the literacy-level but also for Adult Education in its richer and wider sense. All the countries of the East are heirs to ancient and significant cultures which have, no doubt, become overlaid with the dust of the last two centuries but which still contain many valuable elements of moral, intellectual and artistic value. What a Western writer has remarked about China applies in a reasonable degree to other Asian countries also. The culture of the Chinese people is 'so developed that they can in drama, needlework, ceremonies and architecture display a form of art that preserves the traditions of the past and reveals initiative in the present. The

development of economic life should have its place but *not* to the exclusion of the traditional cultural life or the spiritual and moral life essential to a fully developed personality'. In spite of the heavy material and moral reverses that Asia has suffered during the last few centuries, mainly through lack of political freedom and foreign exploitation, we find amongst its common people, gracious evidence of the values of a humane culture—decency, kindliness, neighbourly co-operation, reverence for knowledge, devotion to ideals and a disinclination to interpret life in purely material terms. Notice, however, that these qualities are primarily *moral*, in the larger sense of the word; the *intellectual* and *artistic* values have suffered a more serious eclipse. It is the part of a wise educational policy to enrich people's life with new and dynamic cultural interests and relieve it of the drabness, the mental poverty and artistic apathy which characterise it at present. For this purpose it is necessary to organise a many-sided front and utilise not only the traditional institutions of education but also the powerful modern *media of mass communication* like the Press, the Radio, the Cinema, the Theatre and all the other agencies which have made dissemination of ideas so dangerously easy in this age. Their technique has been developed in the West to a very high degree but, it has usually been harnessed to socially unworthy and artistically inferior ends in order to exploit them for the purpose of making quick and easy money. It must, however, be admitted in fairness that in many Western countries there is a growing and welcome realisation that these agencies must be inspired by a sense of social responsibility and a good deal of excellent work has been done through them in Great Britain, Soviet Russia and some other countries.

In developing and utilising these formidable agencies in Asia, we should endeavour to ensure that Means are not allowed to dominate over Ends, nor are inferior, commercial ends given preference over humane and cultural ends. If we can utilise all these powerful new forces, which Science has placed at our disposal, as parts, of a coherent educational pattern aiming not merely at the provision of amusement but also at the propagation of correct knowledge, right ideas, good taste and humane social attitudes, they can become a vital factor in bringing about an intellectual and cultural renaissance and a democratic social order *should* exploit their possibilities to the fullest possible extent.

Special mention should be made in this connection of the great paucity of suitable, well produced and artistically illustrated literature for children and half educated adults. Many countries in Europe and America have made a remarkable progress in this field and as one sees their beautifully produced books, presenting knowledge in a pleasant style and at popular prices, one feels deeply for the children and adults of one's own land who are denied this joy. No educational or cultural programme can be regarded as complete if it leaves this important need unsatisfied.

The production of suitable literature for children and adults should, therefore, be one of our immediate objectives and the technical difficulties of script and

printing in type which may arise, should be boldly encountered and resolved. In this connection two points will have to be specially borne in mind. What is needed is not a haphazard production of books but a selection made after duly considering the psychological and social needs of children and adults, which may call for a comparative playing down of the didactic element in this literature. Secondly, some organisation should be set up which will enable authors, teachers and educationists to keep in touch with the best of Child and Adult Literature being produced in other Asian countries.

The special importance of this transmission of culture arises from the fact that, in this age, culture cannot and should not be envisaged as 'class culture', the exclusive and cherished preserve of a special group or coterie. The total impact of the forces playing on the contemporary human scene as well as the urges of ethical and Social Justice demand that culture must become the possession of all, that the common man should be so trained and educated that he is able to enter effectively into his cultural heritage and benefit from it. Experience of cultural work amongst the masses has given the lie to the lazy and convenient excuse that they have no capacity to develop artistic and cultural appreciation and that only cheap and third-rate stories and films and plays and newspapers can interest and amuse them. In fact, if they are brought into contact with art and knowledge and ideas, with books and pictures and music, with great drama and good poetry, there is no reason why they should not respond. Even now their folk-lore often rings truer, both emotionally and artistically, than the commercialised products of culture. These media of mass communication *can* under right direction, play a vital part in popularising the fruits of culture and raising the general standards of public taste and enjoyment. They will help to release powerful creative impulses, which are at present lying dormant, and contribute to the enrichment of national culture as a whole.

Is the successful launching of such a large scale programme possible? Theoretically, there is nothing to indicate that it is not; also, on the theoretical level, any number of objections can be thought out to show that it is extremely difficult, if not impossible, to implement it. There are two relevant considerations which should be taken into account in answering this query. Where urgency is imperative and undeniable, it is the part of statesmanship to meet the situation by bold and vigorous action and the educational situation in Asia is, we have been, desperately urgent. Secondly, we should examine whether this seeming miracle has been achieved anywhere else and, if so, what have been the circumstances conditioning its success. Reference might be made in this connection to two cases—both belonging to this continent—in one of which a amall population and area are involved, while the other covers a very big territory.

There is a group of small islands in the Pacific—Samao, Gilbert and Ellis, Hawaii and Guam—where, a hundred years ago, a majority of the population consisted of cannibals. During this short period, due largely to the work of

missionaries, these islands have to-day a higher literacy percentage than any part of the world except the countries of Northern Europe and America, as shown by the following figures :

Samao	96%
Gilbert and Ellis	94%
Hawaii	85%
Guam	78%

This is an achievement which should put hope into the heart of the timid and shame the pessimist.

The second instance is obviously that of Soviet Russia whose spectacular achievements in the field of education and culture are, I hope, known well enough. Whatever may be the reactions of people of different schools of political and economic thought to the Soviet experiment in other fields, it is impossible not to admire and be impressed by the magnitude of their work in this field. The following facts are relevant here because they cover the situation in the Asian regions of the USSR :

(*a*) At the end of World War I, Russia provided an excellent field for educational work and experiment because it included various types of illiterate or semi-educated communities. There were many primitive tribes that had no cultural past ; there were others who had a period of cultural progress but had, in course of time, lapsed into illiteracy and ignorance, and still others suffering from the handicap of an extreme 'class culture', with a highly educated and cultured minority at the top and an ignorant, unlettered peasantry at the bottom. Again there were national groups with a distinct and sometimes aggressive sense of nationality. The Czarist policy had been one of 'russification' of all minorities and of discouraging the spread of education which might become a threat to the exercise of undiluted autocracy.

(*b*) The Soviet Republic gave a completely new orientation to this policy, because it realised that socialism could not be built in an ignorant poverty-stricken country where people are unable to develop industries or modernised agriculture. With a clear understanding of the relationship between education and the wider problem of social revolution, education was given a high priority and a broader and deeper connotation. It was to be related directly to the life of the people and addressed to its improvement. and literacy campaigns were, from the beginning, supplemented by civic and health education.

(*c*) It was an integral part of the politico-moral faith of the Soviet ideology that all the people of the Republic, irrespective of race, creed or nationality, should have equal right and access to material and cultural

amenities, and 'backward' peoples were backward not because of any inherent inferiority but because of their environment and social conditioning, which a better social and educational organisation could improve. This implied a recognition of full cultural autonomy and it resulted in that remarkable attempt at the educational and cultural uplift of backward groups which forms an inspiring chapter of modern cultural history. New alphabets were devised for about thirty dialects that had no alphabet so far; books were prepared and printed and education given in local languages, against the advice of those who wanted to impose Russian on all such regions. This policy has resulted in reducing illiteracy very considerably—it varies now from 5% to 30% in different regions.

(*d*) Education being thus invested with the dynamism generated by a living, social purpose, there was a great flowering of the local genius in all directions. During the short period of 20 years, universities and scientific and cultural institutes have come to be established in some areas where even primary schools were a novelty. Research has been undertaken in their folk-lore, arts, crafts, music and other fields of culture, and even the erstwhile backward Asian Republics participate on equal terms in the ten days' Festival of Art held at Moscow every year. The following figures pertaining to the Asian Republic of Kirghiz, a very backward and neglected region will reveal the truly remarkable transformation that has taken place there in less than 25 years.

In 1917, there were only 70 schools with a roll of 4,000 children and they were taught in Russian because there was no Kirghiz alphabet and consequently no books. There were only 4 persons who were reported to have received secondary education. There were no newspapers or magazines or theatres or scientific institutes.

In 1941, There were 2,140 schools with a roll of 3,28,000 children taught in the local languages. As early as 1931, over 1,30,000 copies of 120 text books were printed and there were 40 newspapers and magazines with a circulation of about 34,000. By 1934, over 2,000 teachers, who had received secondary education, were working in schools.

Cultural and intellectual activities had been greatly quickened with the result that by 1941, there were 17 theatres, 70 research centres and experimental stations, and a branch of the USSR Academy of Sciences had been established.

A study of this comparative picture can help us to answer the question raised in this section: Can the rest of Asia achieve what Soviet Asia has done? Certainly, for the Soviet Asian peasants and workers are not possessed of

any super-normal intelligence nor were the conditions prevailing there peculiarly favourable to cultural growth. In fact, in many ways, the conditions obtaining in other countries are more favourable. Russia has had, however, the great advantage of a resolute, clear-headed and single-minded leadership which had the courage to mobilise all available resources in the service of a coherent and dynamic programme. Given the same determination on the part of national leadership and a respite from internal dissensions, there is no reason why we should not be able to achieve similar results within a reasonable period of time. The Russian experiment also shows that there is no justification for harbouring any timid mental reservations about the capacities of the so-called 'backward' peoples and, given the right stimulus, they can achieve the same degree of intellectual, cultural and technical development as the 'advanced' peoples have done.

Section V

SOME SPECIFIC PROBLEMS

In this Section it is proposed to invite the attention of the Conference to certain specific problems, connected both with the ideology and technique of Education, which we have to solve with due regard, no doubt, to our special conditions but also to the interests and welfare of Asia and the world as a whole.

1 *The relationship of State to Education*

This question covers many problems of practical importance, *e.g.*, the respective spheres of State effort and private effort in Education; the degree of control that the State should exercise over schools; the dangers inherent in the domination of Education by the State; the inadequacy of a *laissez faire* policy which leaves this vital social service to the mechanical operation of the law of supply and demand. In brief, it is a reflection, in the educational field, of the eternal issue between Freedom and Organisation and the proper solution is *not* choosing the one and rejecting the other but of finding the right mean that will reconcile its values of both. I would like to suggest that, in the particular stage of our development, the State will have to assume a great deal of direct responsibility for education, at least in the lower stages, because reliance on private effort cannot meet the large scale demands of the present situation and it has, in fact, failed to produce worthwhile results. But it will be equally necessary to ensure freedom of experimentation –not merely by allowing or tolerating it but by directly encouraging and financing experimental work on which ultimately all qualitative improvement depends. The State should go even further and use its resources of organisation and finance to make the results of such experiments available to other workers in the field. An organisation like this Conference, or a regional branch of the UNESCO might well assume the

responsibility for making the results of significant educational developments available across national frontiers. Another important problem, which comes under this head, is that of securing the fullest educational and cultural autonomy to all minority groups and special regions, for, while there may be something to be said in favour of large-scale planning and uniformity in the political and economic field, in the cultural domain real progress depends on catering solicitously to the needs of individuals and small groups.

2 *Education for Democracy and Peace*

This problem is at once national, Asian and international. During recent decades we have had a tragic experience, in the West and, in a lesser degree, in the East also, of how the resources of education and culture can be utilised to develop simultaneously an aggressive and warlike mentality in foreign affairs and a docile, unquestioning acceptance of dictatorship at home. In conformity with our deeply cherished historic ideals and values, it should be the ambition and privilege of Asia to use her growing power and influence in International Councils in favour of Peace and the development of democratic institutions. The present tense situation is not the result of any accidental or temporary causes but is the cumulative outcome of deep-rooted political and economic tendencies and forces operating for many decades. If we are drawn into this unholy vortex of power politics, either as principals or as satellites, and join the game of exploitation, we shall be helping to hasten the world to its well-deserved doom. But if we can win and guard our own freedom and reconcile it with the freedom of all other nations and peoples, if we can become the champions of the cause of all oppressed groups and countries and help them to attain their rights and if, by our scrupulous political integrity we can put to shame the grasping and greedy politics of others—if, in a word, we can raise politics to a moral plane—we may help to stabilise the tottering equilibrium of the world.

Democracy and Peace, in the modern world, are not really two separate problems but two phases of one and the same problem. Real democracy is more than mere equality of political rights, and implies equality of social, economic and cultural opportunities also. Unless we can establish such genuine Democracy we shall not be able to remove the basic tensions which are ultimately the real cause of War, whatever the immediate, superficial causes may appear to be. Thus Social Justice, which is the real ethical inspiration of Democracy, is seen to be a *sine qua non* of Peace. It should, therefore, be one of the most important long range objectives of our educational policy to facilitate the growth of real democratic institutions and, through them of devotion to Peace. We must, however, remember that the *spirit* is much more important than the form and that education is concerned not with the advocacy of a particular political structure which may be called democratic and yet leave life largely untouched and unimproved but with the *basic values* of a democratic social order: co-operation, tolerance, social and economic equality, readiness to accommodate differences and welcome cultural variety and, above all, respect for

human individuality as the supreme asset in life. And these can surely be inculcated and strengthened through proper organisation of education. It will be necessary for us, therefore, to examine how the curricula, methods, organisation and the entire ideology of education should be re-oriented with this objective in view. This is not an entirely virgin field as, in many countries—notably Great Britain and America—a great deal of work is being done in some pioneering private schools as well as in State schools to strengthen the democratic spirit and promote an international outlook amongst the students. We should be ready to learn from them and, after critically studying their experiments, adapt them to our circumstances. In this effort we shall have one rather important advantage over Europe and America in as much as we have not to fight against a strongly entrenched imperialistic, or aggressively nationalistic mentality In fact, with the ill-fated exception of Japan, no Asian country has, for centuries, shown any marked spirit of aggression So the development of an international outlook—and to a lesser degree of a democratic ideology - does not offer a really stubborn problem, provided we set about it in the rightway.

3 *Vocational and Technical Education*

In this field Asian countries have a great leeway to make and its importance, obviously, arises from the fact that the whole problem of technological and industrial development is bound up with it. Without adequately trained personnel, we cannot have technical development and unless there are large-scale plans for industrialisation, there is neither a sense of urgency for training the personnel nor the possibility of absorbing them in suitable lines of work. This vicious circle has to be broken and in many countries, there are already indications that this is being done. Mark the Development Plan being prepared in India, China, Iran and other countries. The problem now is to train technicians quickly and this can be done partly by utilising the facilities available in Europe and America and other Asian countries for the purpose and partly by building up scientific and industrial institutes in our own countries where the services of foreign experts may be utilised so long as they are necessary. India has adopted both policies —she is sending several hundred students every year for technical training abroad and has recently undertaken the establishment of big scientific and technical institutes in India. Many other Asian countries have likewise been sending their students abroad for technical training and it would be interesting to learn what is being done there in the way of providing high grade technological training at home. It is, however, essential that the actual direction of industrial enterprises should remain in the hands of the people of the country and should not pass over, directly or indirectly, into the hands of foreigners. We should take care not to place in their way again the temptation to which they succumbed in the 19th century.

4 *The Status of the Teaching Profession*

Learning and scholarship have always been held in high esteem in Asia and the work of teachers has been regarded as akin to the work of men of

religion. So far as can be judged from the data available they were not financially very well off in the past but their economic status did not compare unfavourably with that of other ordinary citizens. They enjoyed, however, a high degree of prestige and social esteem Lately, there has been a marked deterioration of the position on account of the operation of several different factors. The traditional association of education with religion has largely broken down and it has not been replaced by any general consciousness of its high social significance and purpose. Again, the general economy of society has changed definitely, almost aggressively, into a money economy which means that material wealth is the criterion on which people's social worth and importance is usually judged. The teacher is poorly paid—so poorly paid, indeed, that one feels reluctant and ashamed to specify the salaries—and he is consequently relegated to a far back seat in the social heirarchy. One of our urgent problems is to raise his economic status and prescribe a minimum national scale of pay below which no teacher may be paid in any State or Private School. The Burnham Scale of Salaries, which has been recently revised, did this, many years ago, for teachers in the United Kingdom and it has had a far-reaching effect on the quality and efficiency of the teaching personnel. We must do likewise and at least ensure that the school teacher is not rated lower in pay than other social functionaries doing work of similar importance and difficulty. This will facilitate the diversion of the requisite talent to the educational field.

Further, it is necessary that the great gulf which separates teachers of primary schools from those working in higher institutions should be appreciably reduced and there should be a reasonable approximation between their enrolments and other connected facilities. This is to be urged not only on grounds of justice but also because this is the only way in which the teaching profession can be organised and consolidated and the importance of teachers' work, irrespective of where he is working, can secure recognition. In India—and I believe the situation is no different in other countries—the social and financial status of primary school teachers is particularly low and they are not regarded generally as doing work which is just as significant as that, say, of University Professors. Consequently they develop an inferiority complex which is bad for them as teachers and as human beings. In Asia, with its ancient tradition of reverence for all knowledge and all teachers, we must resolutely break down this caste system and organise the entire profession on a footing of equality.

It would not, however, be sufficient to free them from the constant financial worries which cripple their efforts at present. Teachers, Society and the State should also co-operate to raise their social status. Society and the State can devise many schemes for rehabilitating the position of teachers, for instance, by due recognition of work of outstanding merit, practical acknowledgment of their status at public functions, and associating them more closely with community activities and local administration. On the other hand, it is the business of

teachers to win the respect and appreciation of the community by improving the quality and standard of their teaching, by developing a high degree of professional integrity and pride and by interesting themseleves in the wider social implications of their work. They must become not only efficient agents for imparting literacy and education, in the narrower sense of the word, but should visualise their activities as part of the broader problem of social reconstruction. It is only this realisation that can give a dynamic inspiration to their work.

5 *The Training and Exchange of Teachers*

Closely connected with the preceding question is that of providing adequate professional education for teachers. There is no comprehensive system of teacher training in any country in Asia and the percentage of poorly qualified and untrained teachers is quite high. This is a very serious difficulty because all our schemes of educational reform and improvement depend for their success of securing a personnel possessing the requisite efficiency and ideology, which only good training can ensure. The Scheme of Post-War Educational Development for India rightly places teachers' training in the fore-front of its programme and it is necessary to give it the same priority elsewhere. In the past, this training has been narrowly conceived as concerned primarily with technical efficiency. In the new orientation, equal (if not greater) emphasis should be placed on the inculcation of the right ideology. If the particular ideology of life for which Asia stands has any value—as we believe to be the case—education is obviously one of the main agencies through which it can be communicated from one generation to another and the teachers are its proper custodians.

Undoubtedly, it is important that all teachers should be imbued with the finest spirit of their national culture but it would also be useful, for some of them at any rate, to understand and appreciate the basic values of Asian culture also. This can be attempted in several ways. Some promising teachers might, for example, be given a chance of working in other countries and profiting from such experience. This implies a scheme for the interchange of teachers, of all grades, amongst various Asian countries. The contacts established between China and India through Shantiniketan and through the recently established chair of Indian History at the University of Peking are welcome instances of the kind of thing that needs to be done on a much bigger scale in order to promote cultural intercourse and understanding amongst the peoples of Asia. This Conference will serve a very useful purpose if it can stimulate this tendency and teachers, scholars and students are exchanged freely between the countries of the Middle East, the Near East, the Far East and India.

6 *Interpretation of Inter-Asian Culture*

Cultural intercourse further postulates the study of other languages. So far, we in India, for instance, have had our contacts with other Asian countries mainly through the medium of English rather than the languages of the countries

concerned—the only welcome exception being contacts to some extent, between India and Muslim countries through Persian and Arabic. This is not enough. There should be a more widespread study of other Asian languages—not, indeed, to the exclusion of English and other Western languages, for culture knows no frontiers—so that we may have a chance to understand our neighbours directly rather than through the medium of a foreign language. A tendency in this direction is already visible, e.g., the recent move to start the study of Russian at Delhi University and it will, one hopes, receive a further stimulus as a result of the setting up of direct political relations between India and other Asian countries. Each embassy may well have a cultural attache specially charged with the duty of interpreting the culture of his people to the country concerned. Some embassies in Europe have already made such arrangements; there is no reason why we should not do the same.

This work of interpretation will be greatly facilitated if an organisation is set up to encourage and assist the translation of significant and important books of each language into others. At present we know far too little of what is happening in the Asian world or what good books are being published in Chinese, Japanese, Arabic, Persian, Russian or Indian languages. Even if we were keen to translate, we would not know how to select suitable books. There is need for a Bureau to which all such questions could be referred for advice and which might serve as a 'general clearing house' for information on matters of common cultural interest.

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CONFERENCE

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EDUCATION IN ASIA

by

P. Narasimhayya

11.2.19

GROUP D: CULTURAL PROBLEMS
TOPIC VII: CULTURAL PROBLEMS

S.R. Tikekar

INDIAN COUNCIL OF WORLD AFFAIRS
NEW DELHI

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EDUCATION IN ASIA

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EDUCATION IN ASIA

I

World-wide Reform in Education

All the world over today, educational reform is being earnestly discussed and implemented in order to train the youth and the adult towards better modes of living and better means of living. It is significant of this real interest that during the war and indeed during the height of the war last year, a new Education Act was formulated and passed by Parliament in Great Britain. In China, even during the war, ' through the baptism of fire, education has climbed to new heights of progress ', and by 1943, there was an increase of 25% in the higher technical and other institutions. In India, there has been a nation-wide planning of educational reform. In other countries also, Iran, Afghanistan, Ceylon, and others, the improvement of education has received more and more attention, and some measures have been taken towards this end. And, in the course of the present year, an international organisation, the UNESCO, has been set up by the United Nations for the propagation of better ideals of education and culture all over the world.

The intellectual and moral habilitation of all countries by means of a reformed cultural, scientific and vocational education, is now not merely an individual national problem but an international one. As surely as all the world is now a near neighbourhood, so surely is it vitally important and urgent to build up a world brotherhood through education. It is no exaggeration of the value of education to say that this is the one permanent basis of international understanding as well as of national welfare and enlightened individual life.

There is no lack of appreciation in India or in other Asian lands, of either the value of right objectives in education or the urgency of reform in the existing systems.

I hope that in the course of this Conference, there will be much valuable exchange of experience and inquiry and that this will bear fruit in the development of modern education in Asian lands.

II

Paucity of Asian Educational Statistics

Because of the paucity of statistical and other data, it has required all the temerity I could call to my aid, as well as the summons of the Organising Committee of the Conference, to attempt to sketch a brief Memorandum on the common problems of modern Asian education. There are, of course, many interesting accounts written of Asian Countries by modern travellers, retired colonial and diplomatic offcials and others. But most of the works have an air of special pleading or are too brief and scrappy in regard to the more prosaic but more important aspects of these countries. And the statistical data that can be gathered from general

reference-books or almanacs are very often out-of-date, inadequate or set out in broad unanalytical schemes.

I would suggest in this context, the preparation and publication, if possible, of a regularly revised and up-to-date book of reference on educational conditions in Asian countries.

The British publication called the *Europa*, which serves this purpose in regard to the countries of Europe would perhaps be a good model for a similar book of reference on Asian countries.

III

Early Asian Systems of Education

The approach made in this paper to our problems of Asian Education is from what may be called the evolutionary point of view. It is both interesting and essential to look at Asian Education as the growth of an earlier indigenous system into a modern and partly Western system to meet the increasing demands of the people for modern learning in the humanities and sciences, modern vocational training and generally speaking, the modern equipment in the struggle of life. It is an approach which is different from the usual purely analytical official reports published annually on education. It would give a wider and more concrete view of the entire educational developments in Asia, its false directions, conflicts, failures and successes. It would show the present problems of Asian education in perhaps a truer perspective.

The causes of the decline and fall of peoples have not yet been fully revealed; and it is still to be explained how some of the Asian peoples who led the world in education and stood at the vanguard of progress in early times decided at some fateful time to draw down their blinds, dim or extinguish their lights, and sink into a moribund condition. The ancient achievements of these peoples in engineering, medicine, metallurgy and various other fields are still valuable and may yet give a point or two to the modern sciences. There are iron and other pillars in India — in Delhi itself for instance—whose size and rustless condition despite the rigours of the Indian climate, have been a puzzle to modern metallurgists and metal-casters. There are found in all Asian countries, tanks, channels, buildings, forts and other structures which are the admiration of modern engineers. From the astronomical studies of the stars in the heavens down to the botanical or pharmaceutical studies of minute herbs in remote forests and hills, in fact, in the whole range of the positive sciences, not to speak of the moral and philosophical, the peoples of Asia have made remarkable and enduring contributions to knowledge. The sad story of their decline has yet to be fully analysed, and its causes and stages clearly set out. However, it is certain that among these causes, the main or at least a very considerable part was played by their smug adaptation to an easy and static environment. For, so inexorable is that other law of evolution, the law of progress, that there is no standing still either for individuals or societies, but always a movement, either forward towards betterment, or backwards into decay. And the Asian peoples sank steadily backwards.

IV

The Growth of the Modern System

However, modern developments have created a new order of international life, destroying the isolation of Asian peoples and bringing to them a new and dynamic environment. In the arts of peace and in the arts of war, the whole world has now come together. The modern sciences, the modern technical skills, and modern ideologies are now all over the globe. The problem of Asian education is to adjust the indigenous systems to the needs of these modern agencies. The right adjustment consists in the organic development of the indigenous into the new. Culturally, modern education should be organic with the national culture while keeping abreast of the best modern thought and science. In technical and vocational training, it should be organic with the vocational life of the people while keeping abreast of the best modern technical skills, industries and crafts. Such is the fundamental need and problem of Asian education today.

It is the task of the educationists to build up such a system, one which is well co-ordinated in its different sections and stages; and which neither ignores the rooted life and culture of the people nor lags behind modern developments of thought, science and technical skill. Such reforms as have been attempted hitherto towards this end have often failed to produce their best effects because of their piece-meal character, their lack of coordination. What is needed is unitary and comprehensive clear planning as much as a definition of the objectives and needs of Asian education.

V

Problems of Pre-primary and Primary Education

In regard to Pre-primary Nursery Schools, the present problem in all Asian countries is mainly that of establishing and developing as many of them as possible especially in modern industrial areas where both the parents go out for work and the conditions of home life are low and squalid.

For the children of the next higher age-group, the Primary School-going age, the three R's (Reading, Writing and 'rithmetic) have been regarded as the minimal unit of education and as the birthright of the whole community.

In the census-systems of all countries, the percentage of bare literacy has become the index of Mass education. Educationists as well as others largely accept it as the primary standard of popular education.

(*a*) *The Unit of literacy*

The literacy percentages of some of the Asian and other countries are as follows :

Country	*Percentage*
Japan	100% (nearly)
China	20% „
Siam	48% „
Indonesia (1930)	7% „

Country	*Percentage*
Burma	37% (nearly)
India	15% »
Afghanistan	10% »
Iran	10% »
Iraq	10% »
Africa	2 to 12% (nearly)
Germany	100% (nearly)
UK	100% »
USA	97% »
Canada	96.5% »
Australia	95% »
Netherlands	100% »
New Zealand	95% »

There has been no lack of effort in most of the Asian countries to spread Primary education. But, paradoxically, it has not been universally or widely accepted even where it has been offered along with all possible inducements. The school-fees have been dropped; interesting methods of instruction have been adopted; good school buildings, adequate equipment, and well-trained staff have been provided; and furthermore in some areas, attendance has been made compulsory by special legislation and defaulters threatened with punishment. But in spite of all attractions and threats, literacy has not appreciably spread but still remains at a low level. This is the paradox of the modern, free, and compulsory system of Primary education in Asian countries. Faced with this paradox, they have shown a commendable spirit of caution and wisdom in not enforcing the education. For not only is the enforcement impracticable, but also educationally unwise until the paradox is better understood and resolved.

In India, in a few areas, primary education is free and compulsory, but not uniformly enforced. In China, primary and middle education are free and compulsory but not strictly enforced. In Japan, Siam and Ceylon, the situation is the same in Primary education. And so too is it in Iraq, Iran, Turkey and Egypt, obligatory but not enforced. In Iran, an Act of 1934 provided for a gradual introduction of compulsory education over a period of ten years.

The compulsory age-spans in various countries are as follows :—

Country	*Span of age*
China	6-12
Turkey	7-12
Egypt	7-12 (Act of 1933)
USSR	7
Germany	6-14
Italy	6-14
Madagascar	6-14 for Europeans 8-14 for local population.

(*b*) *Modern experiments in India, China, etc.*

Attempts have been made in several Asian countries to improve Primary education and resolve its modern paradox. A notable experiment has been made in India in this direction in the new system of Primary education associated with Wardha and the name of Gandhiji and known as the Wardha Scheme of education, the New Education, the Nayi Talim, etc. This with some modifications, has now been included in the Basic education scheme of the Government of India. The principle of the scheme is that craft-activities and vocational training are an essential content of Primary education and that further they form its natural technique of instruction and learning. It is hoped that when this is tried in co-ordination with its complements, viz., a senior Basic scheme and a net work of technical, agricultural, industrial and other craft schools, the general level of mass education both in literacy and in the practical vocational skills will rise together to an appreciably high degree. The People's Education Movement in China also was inspired by the same motives as the New Education or Nayi Talim of Wardha. In an article on the Movement, (published in the *Harijan* of 29th October 1938), Dr. Hengchih Tao writes, 'We want to awaken the scholars to pull out their hands to work, and the great masses of people to blow something into their heads in order to think.....What we need is an education for brain-directed hands and hand-motorised brain'. It is the lesson of the paradox of Primary education that literacy cannot progress except along with vocational training.

It is a waste of effort and funds to push forward without this enlarged content. This indeed is the minimum unit of education and not mere literacy. The theory that literacy is the basic and primary unit of education has been responsible for many false trends of modern primary education in Asian countries. It is high time that this conception of primary education yielded place to a wider conception, and literacy recognised as a mere phase of a wider unit.

Educational reform today should therefore be turned to the problems of enlarging primary education, and as a necessary corollary, to the enlargement and co-ordination of Secondary education with it.

VI

Wastage in Primary Education

The problem of wastage in Primary education, which prevails in all countries would also perhaps be more easily solved after the enlargement of primary education.

The percentages of wastage in various countries are as follows :

Country	Percentage of school going children (among school age group)	Percentage of wastage	Literacy Percentage for whole population
Indonesia (1935-40)	40%	50%	
Burma (1936)	25%	85%	
India	—	80%	

VII

Cultural (or Moral and Religious) Instruction in Primary Education

Like vocational training, is a religious or cultural training also a necessary part of primary education ? Certain evidences in India, Burma, Indonesia and other countries seem to show that it is. In areas where a system of schools with a religious or cultural atmosphere exists, primary education, even of the present kind, has spread more and literacy percentages are higher. This concomitance is curious and needs closer study than has been given to it so far. It points to the conclusion that a state system—which is culturally and religiously neutral—will fail to meet the full need of primary education.

Positive and negative instances of this concomitance, as the logicians and scientists would say of valid proofs, are furnished by India, Burma and Indonesia. In India, in the south-western regions of Malabar, Cochin and others, certain areas of Bengal, and others there is a higher percentage of literacy. One of the causes of this phenomenon may be the popular appreciation of schools with a religious and cultural background. In Burma, the evidence seems even more definite. It has been observed, thanks to the monastic schools of Burma that she had in the 18th century a higher percentage of literacy than Europe*. In recent times with only about 25% of her children registered in the Departmental schools and 85% of wastage even among them, Burma can put up a literacy percentage of about 37%. Indonesia furnishes perhaps a negative instance. With a higher percentage of school-going children, (40%), and a lower percentage of wastage (50%), its literacy is barely 7% i.e., about 1/5th of that of Burma.

These are facts which need closer examination. Is the higher literacy due to the system of religious schools which provide a curriculum of general education ? Are the people who resort to them, not only of the well-to-do classes in whom the craft-interest is subordinate but also of the poorer classes who are willing to make an extra sacrifice to get an education which has an indigenous cultural atmosphere ? Or is the general level of economic well-being good enough by virtue of simpler standards of life, spirit of contentment, etc.,—to enable all classes of children to join these schools ?

However, on the question of religious education, here are the wise words of Gandhiji, 'We have left out the teaching of religions from the Wardha Scheme of education, because we are afraid that religions, as they are taught and practised to-day, lead to conflict rather than unity. But on the other hand, I hold that the truths that are common to all religions can and should be taught to all children. These truths cannot be taught through words or through books. The children can learn these truths only through the daily life of the teacher. If the teacher himself lives up to the tenets of truth and justice then alone can the children learn that truth and justice are the basis of all religions.'

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* *Vide* 'Education in Burma,' by Owen Hillman, Summer Number, *Journal of Negro Education*, 1946.

VIII

Historical Review of Primary Education in Indonesia, Burma, India etc.

Modern Primary education thus suffers from two striking deficiencies, the vocational and the cultural. The poorer classes, the large masses, in whom the craft or vocation interest is dominant, have found nothing of practical value in the established primary system. The well-to-do classes on the other hand accepted it only because of its vocational value for Government service, politics, commerce, higher studies and journalistic and other activities. But even while accepting it, they turned away as far as possible from the culturally neutral state-system of schools and curricula and resorted to an indigenous or ' national ' type of schools.

The history of modern education in Asia is the story of the failure of a craft-less and culture-less system built apart from the local foundations, and the rise of new systems which are vocational and cultural in character.

In Indonesia, the Dutch Government following a liberal colonial policy, inaugurated about a century ago the system of modern education. It made no appreciable progress however, and after about 60 years it had to be set on new foundations. In 1907, a new indigenous school-system known as the *desa* or local-school system was organised. This state system of education was neither free nor vocational, but it had at least the merit of being geared to the Indonesian world. The education was given in the mother-tongue of the children ; the locality met the cost of constructing and maintaining the simple school-building while Government District authorities paid for the staff; and the schools led on to ' Continuation schools ' which provided a few vocational subjects like Agriculture for boys and Domestic Science for girls. This was certainly a valuable reform, but even with it, the primary schools have failed to attract the majority of school-going children, and the continuation schools hardly more than 1/7th of the primary school children. The reason is that this reform has stood by itself uncoordinated with the rest of the system. The continuation schools form a blind alley and close the door to the main system of High School education.

This Indonesian experiment is an illustration of the futility of piece-meal reform. The history of Burmese education illustrates likewise a good beginning hastily abandoned. When modern education was introduced into Burma, the indigenous monastic schools which were spread over all the villages and towns were asked to register for the teaching of modern curricula. In increasing numbers, they adopted the new secular curricula and were fast developing into a nation-wide modern system. But after the first five years of this experiment a new policy of creating a separate system of secular schools was put into effect. For a few years, the race went on between the secular and the monastic schools, but the latter slowly fell back, and by 1916 the number which registered for the modern curricula was only 3,418 as against the 5,066 secular schools that year. And by 1933 their number decreased still further to about 900, in a total of 17,000 or 18,000 monastic schools. They fell back to their main task of religious, moral and cultural instruction,

In India also, the modern system was built apart from the indigenous system, a section of which still remains and carries on religious, moral and classical literary instruction. These are the Pathasalas, Tols, Muqtabs, and others which still carry on their modest functions. The indigenous craft-education system however has decayed more or less completely, and a modern system of technical schools is being built up in its place.

IX

Problem of Secondary and University Education

Turning to the Secondary and Higher stages, one sees the same general picture of an academic education, and of various efforts being made by individuals or governments to improve the system.

(*a*) *The emergence of national schools and universities in India, Burma, Indonesia etc.*

In India, the Benares Hindu University built up by Pandit Malaviya, the Viswa Bharati and the Sriniketan created by Rabindranath Tagore, the Gurukula at Hardwar built up by Swami Shradhanand, the chain of Anglo-Vedic Colleges and Schools inspired by Swami Dayanand Saraswati, the Adyar National University and the several schools and colleges of the Rishi Valley Trust founded by Mrs. Annie Besant, the Gujrat Vidyapith sponsored by Mahatma Gandhi, the Thackersey Women's University of Poona sponsored by Professor Karve, the Aligarh Muslim University inaugurated by Sir Syed Ahmed, and a large number of national schools and new high schools founded all over the country are an indication of the efforts made to improve Secondary and University education. The wide measure of agreement in the country on the need of a cultural as well as a vocational education is indicated in the Hindu - Muslim co-operation in founding the Muslim University College (M. A. O. College) at Aligarh. Sir Syed Ahmed the founder writes (*vide* Report of the Indian University Commission 1882) : 'The original object of some of the supporters of the Committee was to confine the College to the Muhammadans for whose special benefit educational facilities were to be provided. But so much goodwill, sympathy, and generosity were displayed by the Hindu nobility and gentry that the Committee in establishing the college declared it open to Hindu students also, especially as the curriculum (beyond religious instruction) pursued in the college suited Hindus and Muhammadans alike and the former showed a readiness to join the college.'

In Burma, the same need of reform led to the foundation of National Schools in the 1920's. But they refused Government grants and could hardly maintain themselves with public support.

In Indonesia likewise, a new system of high schools, the Taman Siswo, was built up by the efforts of Ki Hedjar Devantaro, a member of the Javanese aristocracy. These schools, which numbered about 250 in 1940, have been increasingly popular. Other reformed types of schools also have grown up. But the whole group seems to be handicapped by the lack of financial aid.

(*b*) *Vocational and cultural instruction*

The main problems are, as in the case of primary education, two-fold, viz. vocational and cultural. On the vocational side, the urgent need is for a close network and stair-case of craft schools, vocational continuation schools, technical high schools, and advanced technological Institutes. This is a patent and urgent need of India and presumably of all other Asian countries as well, and it is very high time indeed that besides talking, something were actually done to create a complete system of regional vocational education.

(*c*) *Revision of Text-books re : national Art, etc.*

On the cultural or humanistic side, the need is no less patent or urgent. There has been a tendency to confuse its scope by confining it to what is called ' moral and religious instruction ', and then dismissing it with the argument that religions are many, religions are inflammable subjects and so on, and therefore best left alone. But let us not forget that religions are not without a rational and universal core, and that even after leaving religions out and alone, there is a large segment of culture or humanities which the educationist can safely and very usefully include in his curricula and text-books. There is a real need in India—and probably in other Asian countries also—for a complete revision of school and college text-books, so as to give the pupils a wider understanding and estimate of their own literature, their history, their art, their moral and social ideals, their religious principles, and their customs and manners.

(*d*) *The international role of universities and other educational institutions*

The books have to be revised also from the international point of view. The history and principles of international relations have to be given their due place in education in every country. The Association of University Teachers of Great Britain, referring in a recent Report (1945), to the international functions of a university declared ' In its widest sense, the international function of a university is that of affording opportunities to learn something of the international world and its problems, which are likely to affect more and more the destiny of each individual country. No student should leave the University without having had ample occasion to broaden his horizon in this sense. . . . . In its narrower sense, the University's international responsibility is specially to establish more and closer relations with the universities of other lands.' The principle of widening the international horizon of education applies as much to high school education as to that of Universities and other institutions.

(*e*) *A synthetic curriculum*

There is a fourth need of secondary and higher education—besides the vocational, cultural and international—which too is not merely financial but also curricular. The wide modern ramification of studies is the result of the specialised growth of modern knowledge, and has given rise to the problems of teaching the young scholars to see their world as a whole, to have a balanced and co-ordinated view of all knowledge and not merely a narrow, and to this extent a false view of their own branch of knowledge. It is indeed an irony—and proof of a serious failure

in modern education—that the young scholars should, with all their wealth of modern knowledge about the world, have no vision of the world as a whole. The problem of a synthetic curriculum has been discussed both at the high school level and the higher levels of University education, as concerning the pure sciences, technical training and cultural studies. The details apart, the problem is universal not only in Asian, but in all modern countries. One solution would be the introduction of a compulsory course, in high schools and colleges on the concepts of the modern Sciences and Humanities. The British Association for the Advancement of Science recently examined this problem and drew up a brief curriculum of such a compulsory course.

A curriculum of this scope is especially necessary in Asian countries where the modern categories of the Sciences and Humanities are not often accurately understood or sufficiently wide-spread.

(f) Democratic experience in school and university

A fifth need of Asian education is the provision of the right forms of democratic experience for the youth in schools and colleges. The youth in all countries, and not merely in the dependent countries, stand in need today, more than ever before, of some training in the democratic modes of life. It is necessary in India and probably in other Asian countries as well, to pay more attention to those extra-curricular activities which build up character and the spirit of service, and the qualities of responsibility, leadership and discipline. These qualities may yield no results in the usual degree-examinations, but they are vital for ordered freedom and a good democracy.

X

Some Special Problems of University Education

Some of the Asian universities, university departments and research institutes have attained to high standards, and their scholars have earned world-wide celebrity. The students too have shown great eagerness to enter these Temples of Learning, and nowhere in recent times has this eagerness and reverence been better expressed than in the epic march of Chinese scholars and teachers in 1942 when they carried their university libraries and laboratories before the advancing tides of war and invasion. It is the homage of modern Asia to modern University education.

But many, if not all, of these institutions stand in need of much improvement e.g., in the provision of modern equipment, better trained and more staff, additional Departments and Faculties, better systems of tutorial guidance, better residential halls, up-to-date libraries, efficient medical service, a wide range of extra-curricular activities, etc. Finance has been undesirably a chronic need of the Indian and perhaps also of the other Asian Universities, but no less important has been the need for careful and comprehensive planning. Recent experience in India has shown that the best method of University development is through co-ordinated schemes laid out in fixed periods or stages, such as have been, for instance, worked out for the University Grants Committee of the Government of India by the All-India

Universities. In the past, Universities in India—and probably in other Asian countries also—have developed without a plan or without relation to the objectives of development in the country, following only some popular demand for cheap and quick degree courses or some stray benefactions and foundations. The principle of coordinated development has now drawn attention to various aspects of University teaching and life which have been ignored or treated with indifference. The University Grants Committee of the Government of India was formed roughly on the lines of the Committee in Great Britain; and our experience has shown that an organisation of this character is distinctly helpful in University development.

In numbers too, the Asian Universities are still far below those required for each country. The comparative figures for Asian and other countries in the number of Universities, are as follows.

Countries	Population in Millions	No. of Universities and Colleges	Ratio to Population	No. of Students in Universities and Colleges	No. of Graduates
Manchukuo (1940)	43.2	14 Colleges.	...	...	...
Korea (1938) ...	22.8	1 University and 18 Colleges.	...	...	5473
Mongolia ...	...	...	...	...	...
Japan (1940) ...	73.11	6 Universities 39 Institutions of University rank.	...	72,193 (1936-37)	...
China (1936) ...	422.7	145 Institutions.	...	78,909 (1945).	...
Formosa ...	5.8	1 University.	...	...	...
Indo-China ...	23.8	1 University and 5 Institutions (1943-44)	...	1325	...
Siam (1940) ...	15.7	2 Universities	...	...	...
Malaya ...	...	...	...	...	...
Indonesia ...	70	5 Colleges.	...	1246	81 (1938-39)
Philippines ...	16.9	1 University and 89 Institutions.	...	7567 (1941)	...
Burma ...	14.66	...	...	2466 (1939-40)	...

Countries	Population in Millions	No. of Universities and Colleges	Ratio to Population	No. of Students in Universities and Colleges	No. of Graduates
Ceylon ...	6.38	1 University and 3 Colleges.	...	...	...
India ...	400	21 Universities	...	159,882 1943-44 (for 19 Universities.)	...
Nepal ...	5.6	Nil	...	...	...
Bhutan ...	.3	Nil	...	...	...
Tibet ...	1.5 to 6.0	Nil	...	...	...
Afghanistan ...	10.0	1 University	...	...	...
Iran ...	10.0	1 University	...	...	...
Iraq ...	3.56	7 teachers' training colleges, and 7 others.	...	1314 (in training colleges only).	...
Arabia ...	10.0	...	...	...	...
Palestine ...	1.7	1 University and 1 Institute.	...	914 (1943)	...
Trans-Jordan ...	.4	...	...	...	...
Syria & Lebanon	3.9	3 Universities 3 Institutions.	...	...	...
Turkey ...	19.0	23 Institutions.	...	15,945 (1942-43).	...
Egypt ...	17.42	2 Universities 16 training colleges.	...	12,765 (1943-44)	...
Central Asian Republics of Soviet Union:	...	...	...		
USSR (1939) ...	170.5	772 Institutions.	...	564,000 (1945)	...
Germany (1938)	79.8	25 Universities.	...	43,139 (1937)	...
France (1939)	41.9	17 Universities.	...	102,731 (1943)	...
UK (1945) ...	42.5	16 Universities.	...	50,178 (1945)	...

Countries	Population in Millions	No. of Universities and Colleges	Ratio to Population	No. of Students in Universities and Colleges	No. of Graduates
USA (1943) ...	138.4	1515 Institutions of Univ. grade.	...	1,259,045 (1941)	...
Africa ...	...	5 Universities 1 College.	...	13,058 (1944)	...
Canada ...	11.5	18 Universities and other Institutions.	...	49,818 (1943)	...
Australia ...	7.3	6 Universities.	...	...	...
Netherlands ...	9.04	6 Universities.	...	9395 (1938)	...
New Zealand ...	1.7	1 University. 4 Training Colleges.	...	10,152 (1944)	...

XI

Research

The Co-ordination of Universities and Research Institutes

The total output of research too, in the Indian and perhaps in all Asian Universities and Research Institutes, has been small in proportion to their potentialities and standards of work. It has not yet been actively recognised that research is a main function of a University and that even its teaching is essentially of the character of training for research, unlike the teaching in high schools and primary Schools. This principle of University teaching has unfortunately not yet become effective in Indian and perhaps also in other Asian Universities. Reforms in the methods of teaching, in the systems of tutorial aid, in the relations of the Universities to Research Institutes, etc. are some of the essential means of building up research and the research spirit. Without the inculcation of a general spirit of research even during the degree-courses of the University, post-graduate research must be necessarily slow and wasteful, not to speak of the poor quality of the University education itself. The Association of University Teachers of England observe on this subject (Vide Report of December 1944) ' Research must enter fundamentally into the life and thought of all departments . . . . . The research and teaching aspects of University life are inseparably bound up and cannot be divorced, and this principle should be the foundation of all development '.

Asian Universities cannot afford to ignore any longer this cardinal principle of University education and development.

The Relation of Academic Science to Industrial Sciences

The progress of applied sciences and applied research, in regard to which there is so much planning now, requires that they should maintain a close connection with academic science and the pure research of the Universities. There is a tendency now to separate industrial science and technical colleges from the main current of higher education in the Universities. Their separation, as all reports on this subject have emphasised, is detrimental to both.

This is an important lesson for Asian countries in the organisation of their Research Institutes in Arts and in Fundamental and Applied Sciences.

XII

Finance

Finance, which is necessary for all grades of educational development, is really a most vexed problem of the educationist. It is a pity that there should be limitless money for war but hardly enough for peace. Educationists have teased themselves with all kinds of calculations and dreams as to how a single day's expenditure on war would build a thousand schools, and a week's expenditure would raise an entire educational system to a higher level, and so on and so forth. But the national conscience does not seem to be shocked by the most glaring contrasts and calculations, and finance continues to be a problem for the educationist in all countries especially in Asia.

The following are the educational budgets of some Asian and other countries.

Manchukao (1941)	1.7%	
China (1941-42)	3%	91,196,556 yens (Universities and technical schools only)
Indo-China	11%	
Siam (1939)	11%	
Ceylon	11.3%	
India	13%	Rs. 31,61,42,030 (including fee collections, etc.)
	6% (Provincial)	
Iran (1933-34)	7%	
Turkey	6%	
USSR	18.8%	18,270,000 roubles. (£ 1,941,187)
France	7.6%	4,124,000 francs (£ 34,336)
UK	6.6%	£ 63,344,000

State aid is of course not the only source of finance for education. Other legitimate and necessary sources, such as private benefactions, endowments by industrialists and others should be encouraged. In India, and perhaps in other Asian countries also, these have not been very liberal, apart from a few outstanding

examples. Perhaps they would be, as the value of modern education for national industry and national life and culture is more and more evident and appreciated.

It is pleasant to turn however, by way of contrast, to the figures of the British and American Universities. 'The most exciting thing in the United States', (writes Sir Ernest Simon), 'is their faith in education as measured by the amount of money they are prepared to spend on education in general and on University education in particular'. 'By comparison' he adds, speaking about the UK, 'our expenditure on Universities is parsimonious'. But even these 'parsimonious' figures of the British Universities are far above those of Asian Universities. During the five years 1929-34, the Cambridge University spent £ 780,000 on building projects alone, (1 crore and $1\frac{1}{2}$ lakhs of Rupees). In 1934, the London University had collected £ 1,000,000 (Rs. 1 crore and 30 lakhs) for building purposes; while Oxford's building projects for the year were £ 944,000 (Rs. 1 crore and $22\frac{3}{4}$ lakhs). The Provident Fund terms of the British Universities are 5% from the contributor and 10% from the University,—which obtain in no university in India or perhaps in any Asian country. In 1934, 41.7% of all the University students in the UK held public scholarships of some kind or other, their total value being (Rs. 1 crore and $75\frac{1}{2}$ lakhs) £ 1,350,000, and the total number of students 20,518. This was in addition to numerous private scholarships. The Imperial Chemical Industries alone offered in April 1945 as many as 48 Research Fellowships of the value of £ 600 each.

The total benefactions to the Universities of the UK during the 5 years 1929-34 were £ 5,250,000 (Rs. 6 crores and $82\frac{1}{2}$ lakhs) and £ 675,000 for scholarships (Rs. 88 lakhs).

The total Government grant for British Universities during the year 1944 was £ 2,149,000 (Rs. 2 crores and 80 lakhs nearly). For the years 1945 and 1946, the UGC of England provided 2 millions more and an additional 12 millions for medical education alone. (Vide Speech of the Chancellor of Exchequer in Parliament, 13th February 1945). For the next 10 years for capital developments alone, the University Grants Committee propose to provide £ $18\frac{3}{4}$ millions, and another £ 10 millions specially for medical schools.

The total expenditure on British Universities for an year is about £ 5 millions (Rs. $6\frac{1}{2}$ crores).

A good fraction of this sum comes from various bodies in the USA, like the Rockefeller foundation.

Asian institutions have received a few benefactions from the Rockefeller Foundation and other foreign sources for special purposes like research in tropical diseases, agriculture, etc.

XIII

Medium of Instruction and the Need of Foreign Languages

A problem which specially appertains to the dependent countries in Asia is that of the language of instruction. The public or official language in these countries

being a foreign language like Dutch, French or English, every boy and girl who wishes to enter public life or public office should necessarily acquire a good knowledge of the foreign language.

It follows as a practical corollary that this language should be the medium of instruction in the colleges and universities of the country; and going further down, in the high schools as well. Even elementary vocational courses, like those in agriculture, of the high school and the post-Junior Cambridge standard, have had to be given in a foreign official language like English, and not in the vernaculars,—e. g. in the School of Agriculture at Peredeniya, Ceylon; in the school at Serdang, Malaya, etc. (Vide page 68, Report of Asquith Commission on Colonial Higher Education; Also *Overseas Education*, October 1946, pp. 397). In recent times, however, the vernacular medium has been introduced into some high schools. But the prevalence of the more efficient state schools and the Convent and Mission schools where the foreign medium is employed places at a discount the vernacular-medium schools,—both primary and high.

These are further discounted by the circumstance that they are not co-ordinated with the higher institutions of education, viz. the colleges and universities which employ the foreign medium. And above all, there is the fact that the foreign language is valuable as the medium of public life and public office.

Any foreign medium is on psychological and social grounds undesirable,—on the grounds of its cramping effects on the processes of learning, thinking and self-expression, its inarticulation of the inner soul of personality and tradition, and its lessening of the transmission of education from the upper to the lower classes and from the urban to the rural areas. Yet another disadvantage is added where the foreign tongue is not, like English, of much international or cultural or technological value.

The foreign medium was a necessity perhaps of the urgent introduction of modern education into Asia and the undeveloped state of the indigenous languages. But these reasons no longer hold good and a change in the medium of instruction in all stages is an urgent problem. A good solution widely accepted in India is the use of the main vernacular of each area as the medium, the foreign language being studied as an optional second language.

In Indonesia, Dutch is the medium of instruction in the main system of high schools which leads to the technical schools, Universities and higher institutes. The most widely understood vernacular however is Malay.

In Indo-China, the medium in all Secondary schools is French; and in Korea and Formosa, Japanese. Chinese is however the language which is most widely understood in these areas.

To effect the change-over to the vernacular medium, there is needed not only a better co-ordination of the schools and curricula but also a first-rate machinery for the preparation and maintenance of up-to-date text-books and translations in

all subjects. This latter is the need not only of the dependent countries but also of all Asian countries. The provision of accurate and up-to-date books is the crux of the problem of vernacularisation.

This is difficult enough in the elementary stages of education, but in the higher stages the difficulties become enormous. And then, besides the problem of text-books and journals, there are other problems like inter-provincial migration (where the provincial vernaculars are many), the need of some foreign language for international contacts in culture, science, journalism, and politics. Experience in India has shown that it is unwise to force vernacularisation in the University and higher stages of education and even in the senior high school stage without providing some workable solution for the main problems.

The problem of the plurality of dialects and vernaculars is felt keenly in several countries of Asia and attempts have therefore been made to develop or adopt a common language. The Philippine people have made the following provision in their Commonwealth Constitution : 'The National Assembly shall take steps toward the development and adoption of a common national language based on one of the existing native languages'. (Article XIII. S E C. 3). In India, Hindi or Hindustani is becoming increasingly popular as the common language.

XIV

Language Script

It is interesting to note also some of the changes recently made in the old and time-honoured language - scripts of Asian and other countries. The motives of these changes have been uniformity and simplicity. Turkey set aside her old alphabet in favour of the Latin. Germany adopted the same alphabet in 1941 in preference to her old Gothic. In Kirghizia (a Central Asian Republic of the Soviet) a new script based on Russian was introduced in 1940. In India, there has been a move to provide a common script for the national language. In all countries, attention has been bestowed on the problems of the national language ; and the best practicable measures taken to facilitate its growth and modernisation. It may not be an impossible dream that a common script for the whole of Asia may be developed like the common Latin script of Europe or even ultimately a common script for all the peoples of the world, and perhaps also one common language.

XV

Women's Education and Some Asian Social Ideals

Among Asian women, modern education has progressed but little. This is partly because of certain social and semi-religious notions which stand against girls going out to public schools, their co-education in men's colleges and their working as teachers. The opposition to the first is passing as the benefits of modern education are better appreciated and more liberal ideas about the position and life of girls begin to prevail. The opposition to the second is still strong in countries where women's seclusion is of a quasi-religious character as in the western Asian

countries. It necessitates the costly duplication of all colleges and other educational facilities for women students. The principle of their seclusion is however being slowly relaxed, and this may perhaps proceed apace in future. The opposition to the third, viz. women entering the teaching profession, is also slowly passing. It obtains in all Asian countries and it is to be devoutly wished that the talents of their womanhood will not be denied to the cause of the education of their children.

XVI

Other Problems

There are several other problems of Asian Education which are not less important than those we have considered but to which no special reference perhaps is necessary in this paper—even if time permitted it—since they are problems common to all systems of education the world over, and not peculiar to Asian education. Some of these problems are the training of *teachers*, more efficiently and in larger numbers; the promotion of *educational research* on all problems ranging from those of pre-primary education to the highest grades; the facilities for foreign *study-tours* of teachers; the organisation of a system of *Visiting Professor* from abroad; the increase *of staff* so as to lessen their teaching load and facilitate study and research; the improvement of the *conditions of service* of the teachers of all grades, etc; and for the *students* a better system of scholarships and fellowships; an organisation and expansion of the *extra-curricular activities* of the youth at school and college and even outside; facilities for *foreign studies*, schools for the education of *mental and physical defectives*, etc. and on the *administrative* side, a better system of *school Inspection*, both in its personnel and its method; protection against *interference and tyranny of local or political bodies* in control of school education; a respect for the *autonomy of Universities tempered* by the need of protection against tyranny or corruption, from which no human institution is exempt; the problems of *finances*, such as special taxation, provincial and central contributions, greater public benefactions, etc.; the organisation of a Central Planning Board for an over-all planning of education for nation-building purposes; organisation of *periodical conferences* not only of educational administrators, but also of teachers of all grades to facilitate the exchange of first-hand experience of teaching and teachers' conditions; and on the *public or regional side*, the organisation not merely of night schools for literacy, but *adult education of all grade* by means of popular brochures, lectures, radio, cinema, exhibitions and other apparatus of public education.

It would be a Herculean task indeed to go in detail into these varied problems of education, and this paper confines itself to a brief reference to some of the special and urgent problems of Asian education which have arisen in the struggle of the old to develop into an efficient modern system.

XVII

Asian Culture and the World-role of Asia

But no survey, however brief, of Asian educational problems can ignore the great role which Asia should play in world civilisation and particularly in the inter-

national life of today. Asia is the mother of the great religions and philosophies of the human race; and it may indeed be said, if she failed in her spiritual role in the modern world, 'if the sea lose its saltness, wherewith shall it be salted?' Her privilege and burden is nothing less than the humanising and spiritualising of the world-order. She must make up her mind once again to fulfil it and equip herself for it by a modern educational system which is rooted in her ancient and eternal culture and which can send forth from her institutions men and women imbued with zeal for human redemption, through Peace on earth and Good-will towards all. It would be a pity indeed if the Asian peoples abjured this ideal in whatever schemes they may implement for the promotion of modern education.

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ASIAN RELATIONS
CONFERENCE

March—April 1947

AN INSTITUTE OF ASIAN CULTURE

by

N. S. Junankar

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GROUP D: CULTURAL PROBLEMS
TOPIC VII: CULTURAL PROBLEMS

INDIAN COUNCIL OF WORLD AFFAIRS
NEW DELHI

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This paper has been submitted to the Asian Relations Conference by the author. The author alone is responsible for statements of fact or opinion in this paper.

INSTITUTE OF ASIAN CULTURE

The Inter-Asian Conference convened by the Council of World Affairs is the first gathering of Asian peoples and its deliberations will be watched with interest all over the world. The decisions and policies this Conference may evolve are bound to influence not only the future of the Asian people but also of the entire humanity. This Conference may thus take its rightful place along with the UNO and UNESCO as one of the great landmarks of this century. At first sight, such a Conference may be thought to be rather incompatible with the recent trend of events but a closer scrutiny of current international events and relations will easily show that this contradiction is only superficial. The unity of 'One World', which is, in many ways, characteristic of our age, does not exclude healthy diversity nor do international organisations remove the vital need for distinctive regional groupings. Besides, there are certain valid reasons for an organisation of the Asian people with a common platform and a common policy. Historically, Asia along with Africa has been for centuries the classical paradise of western imperialism and in spite of the many strides these continents have made towards freedom their basic problem still is total emancipation from foreign exploitation. Two-thirds of humanity, as Smuts announced to the world a long time ago, is on the move and no one knows whither. So far as the Asians are concerned they have no longer any doubts about their problems or direction of their effort. Their ideal today is total political, economic and cultural emancipation. The achievement of this ideal, which is bound to come in the near future, will mean a fundamental change in the modern world with far reaching consequences on the organisation of human society. Prophets are already busy warning the Europeans about the dangers inherent in that achievement. The ideals of the United Nations' Organisation and similar international bodies if implemented in practice with their inexorable logic will lead to complete reversal of the position of the west in the comity of nations. The overwhelming numerical superiority of Asia and Africa must inevitably give them a decisive influence in all international affairs. Hence the most crucial question of our times is whether those nations which have power, wealth and empires in these two continents will accept without reservations the logic of their professed ideals and aspirations. Some of the present tendencies are rather disconcerting. Smuts has openly declared that the whites cannot accept a position of inferiority in South Africa. The Nazi ideology with its doctrine of the Nordic superiority and other subhuman races has been defeated on the battle-field but its protean forms are rising in other parts of the world. Mr. Churchill would like to unite Europe in order to save the Christian Western Civilisation from the barbaric hordes from the east. Although the spearhead of this attack is apparently the U. S. S. R., its lesson must not be lost upon the Asian and African people. When the entire world order based on exploitation of vast masses of people is disintegrating, doctrines of racial arrogance may yet provide a crusading spirit for its preservation. It is, therefore, fit and proper that the Asians should meet to discuss their common problems and hammer out common policies. The Inter-Asian Conference is thus pregnant with tremendous possibilities. If the oppressed come into their rightful place they will have laid the foundations of a new world order based on freedom, equality, justice and peace. It is in this inter-

national setting and perspective that this Conference will have to discuss the problems of the Asians.

In addition to the present world situation briefly sketched above, this Conference must also correlate the problems of Asian culture and cultural relations with their immediate background. Long before Europe was acquiring the trappings of civilisation, the Asian continent was at the height of its glory and accomplishment. It has witnessed the rise and fall of many civilisations in the past and even today some of its ancient civilisations survive and still have a bright future. We have also witnessed the birth of great religions in this continent and these have spread far and wide. Christianity, which is now so closely integrated with the western civilisation and which so often finds strange defenders, originated in the east and thus the spiritual scaffolding of the west is a gift of Asia. The Arab thinkers made a very important contribution to the revival of learning and science, which set Europe on the path of scientific developments. In Asia itself India occupies a unique position. She has given to the world some of its great religions and philosophies and has to her credit many great triumphs of spirit and intellect. It will be no exaggeration to say that India stands in the same relation to Asia as Greece did to Europe. Her pattern of thought and behaviour has spread far and wide in Asia. Besides, India has been a common meeting ground of differnt civilisations and through her genius for tolerance and adaptation she was able to blend divergent streams of Asian civilisations. It is, however, her intellectual contribution which has given to the east intellectual equality with, if not superiority to, the west. India is thus an intellectual pivot of Asia. It may also be noted here that in recent times a new civilisation has been put on the map of this continent. The Asian republics of the U. S. S. R. represent a great effort in the building up of a new synthesis between the east and west. We have thus a rich and varied cultural heritage, which needs to be preserved and developed.

Although we have a great and glorious past, the present condition of the Asian people is in many ways unenviable. The outstanding feature of contemporary Asia is that the culture and civilisation which have been developed in the past are now in a melting pot. The process of decay and disintegration commenced long before the impact of the west but it was considerably accelerated by the conquest of various Asian countries by the Imperialist powers. The fact of Asian slavery for the last few centuries is a tremendous event which will admit of no facile explanation. Such major catastrophes do not happen unless there is something rotten in the culture and civilisation which succumbs to foreign domination and unless there is something vital in those who establish such domination. The decline of the east can be ascribed to two major reasons. While the east lapsed into the somnambulance of spiritual ecstasy, Europe studied the workings of nature and society and utilised the great resources of power and wealth to build up a dynamic civilisation. Conquest of nature along with reorganisation of political and economic life opened up possibilities of unlimited progress as well as unlimited destruction. It is this combination which enabled the west to establish its domination over the entire world. The second major reason for the decline of the east is its inability to renew that creative effort for understanding of nature and society which alone can guarantee continuous progress and vitality for any group of people. It must always be remembered that neither culture nor civilisation can be built on poverty and ignorance. In Asia both wealth

and enlightenment continued to concentrate in the hands of fewer and fewer people and in course of time the privileged minority itself could not escape the consequences of such a suicidal policy. When the vast store-house of energy and creative effort, which ultimately is the common humanity, remains locked up, no society can prosper.

If we consider the problems of Asian culture and cultural relations in this context certain conclusions follow. In the first place, the future culture and civilisation of Asia must combine our essential heritage with the modern scientific and industrial civilisation. In our blind reaction to western domination as well as to the menace of modern science to the very existence of mankind, we are likely to forget that whatever helps in removing grinding poverty and ignorance—and that is possible only with modern science and industry—are lasting benefits we can throw away only at our own peril. If culture planners neglect science and technology, politicians and economists will take hold of these and are likely to use them with disastrous results. A new order for Asia must be integrated with science and technology and all that they imply. It is, however, for the Asians with their genius for the technique of good life to correct the abuses of power and wealth which have become associated with western civilisation. The need for such a combination cannot be over-emphasised. There are many amidst the Asians who often think that the only remedy for the undoubted evils of modern society is the revival of merely spiritual values. These values are undoubtedly important but they cannot prosper in a society which is condemned to starvation, exploitation and ignorance. To increase the comfort and convenience of ordinary men and women is by no means merely a materialistic adventure. Triumphs in the fields of science and technology cannot be dismissed as materialistic outlook on life. Very often a false contrast is drawn between materialistic and spiritualistic culture. It will be recognised, however, that for any good society or culture a judicious combination of both is necessary.

The second important conclusion that follows from the foregoing discussion is that in Asia itself we have to build up a new synthesis of culture and civilisation from amongst the numerous patterns of the constituent groups. Such a synthesis will only be possible if we are prepared to recognise that these various culture patterns have many good points. We must not fall into the same error as the westerners did in such matters. The cultural imperialism of the west cannot be countered by an Asian species of the same kind. Although some of us may be more fortunate in having evolved great religions or philosophies we must not imagine that anything outside our pale is therefore intrinsically inferior. A culture synthesis requires both appreciation and rational criticism. Once it is admitted that there are many bad points in the various culture patterns, the path is clear for the acceptance of their good points. This Conference must therefore keep in view two kinds of synthesis : one between the east and the west ; another between the constituent culture patterns of Asia.

The third important conclusion is that ultimately any culture or civilisation must be woven in the very texture of the life of the people. Culture is often mistaken for a smattering knowledge of some of the arts and literature and a capacity to show signs of appreciation for great works in these spheres. Sometimes it is confused with a nodding acquaintance with historical monuments and such like things. Such

a concept of culture is only appropriate for a contemplative minority which can pursue its vocations of culture on the basis of the labour of others. Like democracy, our new culture must be of the people, by the people, and for the people. We must see to it that in building up a new culture-synthesis we secure effective participation of the people and make that synthesis available to them without any distinctions of caste, creed or colour. This Conference must therefore evolve a suitable machinery for the dissemination of enlightenment and culture.

All these topics will undoubtedly be discussed under the subject included in the agenda for discussion, namely, 'cultural problems with special reference to education, art and architecture, scientific research and literature'. In view of the tasks in this sphere which have been roughly outlined above, the Conference will no doubt recognise that these can be hardly accomplished through a single conference. Deliberately planned culture-synthesis and its diffusion amongst the Asians as well as in the rest of the world requires permanent machinery. It is therefore suggested that the Conference may well explore the possibilities of setting up some permanent institution for sustained effort in this direction. Such an institution may be appropriately called the 'Institute of Asian Culture'. With regard to its framework and the various tasks that may be allotted to its component parts, the following suggestions are submitted for the consideration of this Conference :—

I. Board of Experts

The first important organ of this Institute should be a Board of Experts drawn from the various countries of Asia. Its major functions will be as follows :—

(*i*) *Authoritative statement of what constitutes Asian culture and the various components of that culture :* This is absolutely necessary for many reasons. For a long time it has been the westerner who has expounded Asian culture and civilisation and their exposition has often been vitiated by his inability to appreciate its essential features and peculiarities. If such a body consists of outstanding scholars from the various parts of Asia we shall be able to obtain from a recognised source up-to-date and authentic information on this subject.

(*ii*) *Critical evaluation of the Asian cultural heritage :* Since we recognise that everything in our past is not worthy of preservation, our cultural heritage must be subjected to a thorough and critical examination. This body of experts should have the courage to weed out the undesirable features of our heritage as well as give sober and balanced appreciation of our good points.

(*iii*) *The impact of the various cultures & civilisations of Asia on one another :* This task is highly important for cultural understanding amongst the Asians themselves.

(*iv*) *The impact of western culture and civilisation on those of Asia :* By and large, this task yet remains unfulfilled. This body of experts must scrutinise the ideas and ideals which have travelled from the west and influenced the evolution of modern Asian culture and civilisation.

(*v*) *The impact of Asian culture and civilisation on those of the west :* It is now recognised that the commerce of ideas between the east and the west has never been a one-way traffic in ancient times as well as modern. Oriental ideas have percolated to the west in diverse forms and it must be the function of such a body to trace the influence of Oriental culture on the west.

(*vi*) *The evolution of a culture-synthesis :* This function will undoubtedly be the most vital for the future of the entire human race. Such a body of experts should try to examine the values and achievements of all cultures and civilisations both in the east and the west and suggest the lines on which an effective and fruitful synthesis can be built up. This work will need the co-operation of scholars from the west and for this purpose the Board may invite leading exponents of thought from the west to give them the benefit of correct appreciation of western culture and civilisation.

In view of the complexity and enormous scope of the task the Board of Experts will have to set up various committees of specialists in the various branches of oriental culture and civilisation such as philosophy and religion, art and literature, natural and social sciences.

II. Language and Scripts Section

It is now recognised that the mother tongue is the only appropriate medium of instruction as well as the most suitable vehicle of mass enlightenment but for various reasons the spoken languages of Asia have not been able to keep abreast of the times. As a result of the cultural domination from the west we have neglected the indigenous media of expression and communication and even the resources of the great Indo-Aryan languages have not been fully utilised for the development of the spoken languages so as to meet the requirements of modern civilisation. Further, the absence of any common language or script has been a great barrier to the communication of ideas and experiences between the various language groups. It is therefore suggested that the institute shall have a strong section consisting of outstanding linguists from the various language groups of Asia. Its major functions will be as follows :—

(*i*) The study of the various classical and spoken languages of Asia.

(*ii*) Development of the major languages of Asia for purposes of expressing and communicating scientific and other modern ideas.

(*iii*) Simplification of existing scripts and evolution of common script.

(*iv*) It will be too ambitious to attempt any formation of a common Asian language but this section may help in building up a *lingua franca* for Asia by making available the existing resources of the major Asian languages to various language groups.

III. Permanent Commission

(for the preservation of historical and cultural monuments)

In view of the ancient character of oriental civilisation we have in Asia a vast number of historical and cultural monuments as well as manuscripts and other literature. It is necessary that a central body should look after the preservation of these. Such a body should also prepare a comprehensive guide to all such monuments and manuscripts with annotations so that all scholars have an open access to the material for a comprehensive survey of the Asian culture and civilisation in all their aspects and inter-relations.

IV. Broadcasting, Cinema and Radio Section

For purposes of effective and speedy enlightenment of the vast masses of people the cinema, the radio and the press offer tremendous opportunities. The institute should make full use of these media of mass communication. In the first instance, the institute should scrutinise the various programmes on the radio as well as the films produced and see to it that nothing objectionable from the point of view of Asian goodwill and understanding gets through these media. Secondly, it should encourage systematic broadcasting as well as production of films for spreading enlightenment. Thirdly, in course of time the institute should have its own broadcasting station and plants for film production. Under the direct supervision of the institute, cultural broadcasting and films should be produced and distributed all over Asia. The power of the press if properly utilised can be a great asset for cultural activities. The institute should produce readable articles on various subjects and get them published through the press.

V. Education Section

It is now recognised that education of the masses on right lines can alone guarantee peace, progress and freedom. It has been well said that since the wars originate in the minds of men we must build defences in the minds of the people for peace and security. The Asians must also build these defences in Asia so that at least in this vast continent neither injustice nor war will be possible. It is singularly unfortunate that as a result of wholesale imposition of western ideology we happen to know much more about the remoter parts of the world while our knowledge and understanding of our own neighbours are insignificant. This is largely due to the wrong emphasis in our educational systems. It is therefore suggested that in the curricula for all stages of education the institute should persuade the various states of Asia to introduce Asian culture and civilisation as a compulsory subject. It should also persuade all the leading univesities in the east to set up research departments of oriental studies with adequate teaching staff and other facilities. The institute itself will produce sufficient literature, both popular and scholastic, which can form the basis of such studies at various levels.

VI. Research Section

In addition to the various bodies of experts that will form part of the institute, it is necessary to have at a central place a number of research students drawn from various countries of Asia. These students will be allotted by the institute various problems of research both for immediate purposes of expounding our cultural heritage as well as for building up a new culture-synthesis. Their researches will be systematically planned and coordinated so that the work of the institute is not only accomplished within a measurable period but also sustained from time to time. Members participating in this Conference should agree to use their influence with their governments and private organisations in their countries to provide a suitable machinery for selection of students as well as adequate financial provision. Such a research section can become an effective nucleus of an Asian University under the guidance of leading experts from the various parts of Asia. In fact the building up of a seat of learning and culture at a central place in Asia is one of the most urgent tasks. The institute may well prepare the ground through the organisation of this powerful research section as well as through interchange of professors and scholars.

VII. Peace and Security Section

It is now recognised that no cultural activity of any kind is possible in the midst of violence, war and insecurity. Peace and security have now become the *sine qua non* of the survival of the human race. Atomic energy with its tremendous destructive possibilities constitutes at present the greatest menace to the human race. No cause or loyalty is greater than peace and security. In this respect it has been found that in spite of all its spectacular triumphs the western civilisation has been unable to prevent periodic mass carnage and even mass poverty. It is for the eastern people with their traditions of live and let live to find a way out from the present deadlock. It is therefore suggested that as an integral part of this institute there will be a section on peace and security. This section would consist of leaders of thought and action in Asia and their major function will be to pool together their knowledge and experience so as to devise an effective technique of social change as well as international peace and security. In this connection it must always be borne in mind that the peace and security we desire must be built upon the solid foundations of equality of races and people, a just and rational social order which will ensure minimum requirements of both mind and body and equal opportunities for self-expression and development for individuals as well as groups. The comparative inferiority of the Asians in the field of destructive instruments has constrained Asia to experiment in the alternative techniques of political, economic and social change. The most outstanding example of this technique is the Gandhian method of Satyagraha founded on truth and non-violence. This section on peace and security will critically examine diverse methods of emancipation and popularise them if in its critical judgment they are found to be effective.

This section may also undertake critical examination of the present social and economic structures in the east and suggest lines on which a new society can be built. In this respect it will no doubt attempt to reconcile modern industrial civilisation with the traditional social framework of the orient.

VIII. Library

Such an institute must have an up-to-date and comprehensive library of its own. Members participating in this Conference should agree to making available to the institute the entire published literature on the subjects within its purview. If such an agreement can be secured there will be at the headquarters of the institute a vast store-house of information for research and study. In order to keep this library up-to-date automatically it is suggested that the members participating should persuade their government to deposit a minimum number of copies from all the countries of Asia with the library of this institute. This can only be effectively done through appropriate library legislation.

IX. Publication Section

The institute should have a publication section of its own. This section will undertake on behalf of all the Asian countries planned publication of our ancient literature in their originals. It will also be responsible for the publication of such literature as the Board of Experts mentioned above may issue from time to time regarding the authoritative exposition of Asian culture and civilisation as well as the culture-synthesis it may suggest. In fact it will be absolutely necessary to publish adequate literature on these subjects so that they can be widely circulated in all parts of the world. Such a section would also undertake the production of popular literature so that the new enlightenment can be made available to ordinary men and women in all walks of life.

In view of the diversity of languages in Asia it is necessary that the literature published by this section should be available in the major languages of Asia. While it is desirable for scholars to be familiar with as many languages as their time and energy may permit, for purposes of producing and distributing scholastic and popular literature on a variety of cultural topics with speed and efficiency, a Translation Bureau consisting of linguists from various language groups should be set up. It will be the function of this bureau to translate ancient literature as well as the publications of the institute in all the major spoken languages of Asia. Such a bureau may also undertake translation of great classics as well as scientific and technological literature from the west.

X. Information Bureau

An institute of this kind with the various tasks outlined above, must have an up-to-date information service. It is therefore suggested that there will be an Information Bureau for this purpose. The members participating in this conference should persuade their governments and various organisations engaged in intellectual and cultural pursuits to supply regularly information about their work to the bureau. In the bureau the information collected will be analysed and kept ready for prompt service. The need for a centralised information service for Asian countries cannot be overestimated. Instead of each country or organisation spending its limited resources on such activities such functions can be easily delegated to a bureau of this kind.

XI. Federation of Universities, Learned Bodies and Cultural Organisations

In order to link up the institute of Asian culture with all intellectual and cultural activities in the various parts of Asia it is suggested that the institute should take active steps to collect up-to-date information about all such bodies and encourage the formation of a federation or a series of federations of such organisations in Asia. Pending the formation of such federations the institute will have a section which will be entrusted with this task. When the federation is constituted it should form an integral part of the institute. It will be remembered here that institutes of this kind frequently lapse into ineffective organisations only providing opportunities for reputation and other returns. Asia today is in a state of intellectual ferment and all sorts of organisations are springing up all over the continent. These are unmistakeable signs of vitality and their energy and creative effort should be fully harnessed for the work of the institute. In fact, if the institute can succeed in building up a genuine federation of such organisations it will be able to draw upon vast resources of talent and ability in the entire continent.

XII. Headquarters

The Institute of Asian Culture should be located at a place where the necessary resources and facilities for its work are easily available. It may therefore be desirable to establish such an institute in a suitable place in India. As the institute grows it may set up regional branches in Asia.

The various constituent bodies outlined above are tentative suggestions. It will be easily realised that if the Conference agrees to the setting up of an Institute of Asian Culture, the scope and functions can be easily enlarged in course of time. Such an institute must become a vital centre of the present intellectual regeneration in Asia. It will have to organise conferences, lectures, exchange of students and professors and such other activities as may promote its objects. It will need to have a regular liaison with governments as well as private organisations in Asia and abroad. It will be particularly necessary to secure the effective co-operation of the ministries of education and similar activities in the countries of Asia. Obviously, an institute of this kind requires generous financial provision. While private charity can help, the major funds for the institute will have to be contributed by the component states of Asia. In view of the universal service the institute can render to the entire continent the states will not grudge generous financial contribution for the building up of such an institute. If the institute remains loyal to rising Asian consciousness and fulfills the vital demands which the great upsurge of the oppressed people in Asia makes it will acquire an abiding place in the making of a new Asia. In framing this memorandum full use has been made of the experience of such efforts elsewhere but the background and perspective of the Asian continent have naturally been emphasised. The institute is meant for the specific vital problems of Asia in particular and of humanity in general. A planned and deliberate culture-synthesis which the institute can build up will be the greatest contribution to the removal of barriers between races and peoples and will provide those defences in the minds of the Asian people which alone can preserve this vast mass of humanity from domination of

any kind. Further, the institute will provide a necessary fillip to releasing our resources of talent and ability for the uplift of the Asian people. It is hoped that the first Inter-Asian Conference will give its earnest consideration to this memorandum. This Conference must lay the foundation of an institute of this kind which will be a beacon of light and decency to the world which is now in rags.

In framing this memorandum I have scrupulously avoided bringing any controversial matters. For the main purpose of such an institute is to secure minimum agreement so as to promote harmony and concord. In matters like culture-synthesis or the evaluation of the various civilisations one must leave the whole question to the judgment of competent scholars actuated by larger loyalties. These are ultimately questions of ideology and men cling to their convictions with great passion and vehemence. It is therefore necessary that in all its work the institute and those who build it should never offend the susceptibilities of the people. But ultimately we should all abide by the verdict of reason and expert opinion.

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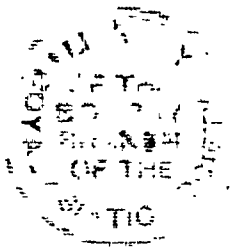

SOME ASPECTS OF JAPANESE CULTURE

by

S. Dutt

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GROUP D: CULTURAL PROBLEMS
TOPIC VII: CULTURAL PROBLEMS

V. R. Tikekar

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SOME ASPECTS OF JAPANESE CULTURE (*)

It was usual and somewhat conventional in the earlier years of the present century to think of Japan in terms of Old and New, mediaeval and modern. The reason for the dichotomy is not far to seek. Japan seemed in the eyes of the world to have effected a sort of self-severance, making a sudden break-away from all her past and coming at one stride 'from coastal junks to ocean steamers, from sedan-chairs to railway trains, from swords to machine-guns and battle-ships, from a burning rag in a saucer of bean-oil to the brilliancy of electric lights, from Confucian classics to the study of modern science'. While the wonder of Japan persisted, a brilliant band of Japanese scholars, headed by Kakuzo Okakura, Inazo Nitobe, Teitaro Suzuki, Jiro Harada and others, set out to give the world the Japanese interpretation of Japan. To gaze upon the mere outside of her modern history and development was, in their view, to hug an optical illusion. The enigma of the missing link between the old and the new in Japan would not admit of solution unless one took account of the tradition and continuity of what they named 'Inner Japan'. The real culture of Japan was the property of this 'inner Japan', a permanent heritage, not the froth and effervescence of only a century's modernism.

This traditional Japanese culture is not only interesting in itself, but is a thing so special and distinctive in Asian civilisation that to dispense with it would be to make by so much the poorer the spiritual treasure-house of the East. The Japanese themselves emphasise reiteratively its innate orientalism,—how it follows in all its forms and modes the characteristic spiritual trend of the East.

In all cultural expression, the relation that is conceived between Spirit and Form is a test and touchstone between what belongs to the East and what to the West. From the Graeco-Roman sources of her civilisation, the West has inherited her conception of form as the vehicle of the spirit: the aim of Greek culture was to bring this vehicle to such aptness, harmony and perfection as to convey the spirit immediately, adequately and truly. The East, on the other hand, has for immemorial ages laid emphasis on the spirit in all her cultural concepts and has allowed it to predominate over form in art. In eastern aesthetics, therefore, the form is not regarded as the perfect vehicle of the spirit,—rather as the symbol by which the spirit is to be approached, something suggestive and indicative, but scarcely representative. This oriental valuation of form as symbol only, as but a pointer to the spirit, is, as the Japanese scholars themselves believe, fundamental in the cultural ideals of Japan.

This fundamental principle gained a certain definition and distinction in Japanese culture through the historical influence of Zen Buddhism. Introduced early in Japan's history (13th century) from China, it became the most deeply contributory factor in the whole cultural development of Japan,—first, by stressing certain ideas and sentiments in ethical behaviour (as in the *Bushido* of feudal Japan), and secondly, by developing certain peculiar nuances in cultural ideas and aesthetics.

(*) Extracted and adapted from the author's Essay on *The Characteristics of Japanese Culture*, for which the Japanese Government awarded on 1st May, 1941, the second prize in the Asian Zone (the first prize going to a Siamese) in the International Essay Contest, held as part of the 26th centennial celebration of the foundation of the Japanese empire. The award could not be actually made on account of the outbreak of hostilities with Japan soon afterwards.

In Zen Buddhism the exaltation of spirit over form is expressed, as Dr. Suzuki points out, in a highly specialised, an intimately distinctive fashion, emphasising 'certain trends of thought and feeling towards things of the world'[1]. In the age which created its finest traditions, the 'Muromachi period' (1334-1573), Japanese culture, flowering forth in different forms of beauty, under the partronage of the Ashikaga Shoguns and leadership of Zen priests, was in vital alliance with these 'trends of thought and feeling'. It was modified by, as well as filled in with, the idealism of Zen Buddhism, so that the Zennist conception of spirit and form,—the peculiar significance it gave to deficiency or imperfection of form, to asceticism in self-expression, to 'aloneness' or 'solitariness,'—became a leading regulative principle in Japanese culture.

In different ways illustrative of this principle are: (i) the aestheticized simplicity of the Japanese tea-ceremony, (ii) the traditional 'thrifty-brush' mode of Japanese painting with its suggestive blank spaces on cloth or silk, (iii) the quality called *Yugen*[2] of the Japanese *No* drama, (iv) the typical domestic architecture of Japan and its interior *decor*, and, above all, (v) the elemental quality of the popular forms of Japanese poetry, *Tanka* and *Haiku*.

The Tea-Ceremony (Cha-no-yu).

The *Cha-no-yu* is now somewhat of an antiquated institution in Japan, five centuries old. But it mirrors, as nothing else so completely does, the mature ('Muromachi era') expression of traditional Japanese culture.

In its origin it had been a Zen monastic ritual. The Intuitional School of Indian Mahayana Buddhism, introduced into China in the 7th century, had taken the form of Zen (Sanskrit *Dhyānī*) Buddhism in the Chinese mind, absorbing much of Tao-ist and Confucian elements. Perhaps it was a Tao-ist impulse in Zennism that gave the ritual of drinking tea together by the monks in front of the image of the Buddha an ethico-aesthetic emphasis. This emphasis was developed by the famous 'tea-masters' of Japan. It was invested by them with a new symbolism and significance.

The *Cha-no-yu* is a means of culture and refinement of life, as Basho (1643—1694), leading poet and aesthete of Japan, points out in a passage of his *Journal*. Referring modestly to himself, Basho says: 'After all this, he (Basho) is now an ignoramus with no accomplishments whatever except that he holds steadily to the pursuit of one line only, which is in truth the line uniformly followed by Saigyo in his *waka*, by Sogi in his *renka*, by Sesshu in his paintings, and by Rekyu in his tea-cult. One spirit activates all their works."[3] Basho calls this spirit, *Fuga*, refinement of life, and adds that 'he who cherishes it accepts Nature, becoming a friend of the Four Seasons'.

The cultural symbolism of the tea-cult,— refinement of life through intimacy with Nature,— had indeed been set in relief by Rikyu, whom Basho mentions, in his *Seven Precepts* and *Hundred Articles*, and the *Roji*, the path to the tea-cottage, and the *Cha-seki*, the tea-cottage itself, had been conceived by him as the approach to and the asylum of this spirit. To Rikyu, *Chado* (the 'way' of tea) is the very touchstone and test of refinement and culture, as he illustrates in the following *Articles*[4]: (83) By observing one performance of *Cha-no-yu*, you can see whether a man is good or bad, self-conscious or the reverse; (84) If the performance is too quick or too slow or is defective in some point,

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1 Suzuki's *Zen Buddhism and its Influence, etc.*, pp. 11-12.

2 "*Yugen* means that it (*No* drama) should have something more in it than what appears on the surface, that it should possess a deeper quality than that revealed"—Harada's *A Glimpse of Japanese Ideals*, p. 167.

3 Quoted by Suzuki in *Zen Buddhism and its Influence*, p. 151.

4 See Okakura's *Book of Tea* (2nd Ed.), p. 95.

he is described as one 'whose tea-accent is bad'; (85) Taste consists in handling heavy things lightly and light things firmly.

Rikyu's conception of the tea-ceremony as a test of refinement was continued by all the succeeding 'tea-masters' of Japan who all minimised its obvious value as a form of entertainment and stressed its implicit spirit of culture and refinement. In the concomitants and accessories of the Japanese *Cha-no-yu*, the hall mark of the old culture of Japan at its ripest and best, the culture of the Muromachi period, indelibly remains.

The 'tea-masters' of old Japan were associated by the 'flower-masters', and the Japanese art of flower-arrangement, so popular with ladies of Japan even today, seems to have been born simultaneously with the tea cult in the fifteenth century,—the *tokonama* (alcove of the tea-room) being its cradle and the tea-cottage its nursery.

Basho, as we have seen, marshals Saigyo, Sogi, Sesshu and Rikyu, the first two poets, the third painter and the fourth 'tea-master', as all being, in common, adherents of the spirit of *Fuga*, and its expression lies in the whole *ensemble* of the Japanese tea-ceremony. The sylvan simplicity and the exquisite purism, the extreme delicacy of the proper 'tea-accent', the feeling, so artfully evoked by interior arrangements, of what the Japanese call *Sabi* or *Wabi*, the intimacy with Nature secured by rustic surroundings, the quaint aesthetic delight, so *spirituel* that it must not pass beyond a certain level of sensibility,—all these betoken what the 'tea-masters' of Japan had conceived and understood to be the distinctive qualities of Culture.

What characteristics this culture bans and excludes are apparent enough,—loudness, assertiveness, novelty, sensationalism, self-cosciousness and artificiality must obviously be alien from it. What it includes and cherishes will appear from how it exploits and expresses the beautiful in the different art-forms of Japan.

The Culture of the Beautiful in Japan

Far back even to the dawn of civilisation in Japan, we can trace a certain responsiveness to beauty as characteristic of the Japanese mind. It is difficult for the historian to say how ancient the seasonal festivals of Japan are or how old is the practice of landscape-gardening Some Japanese scholars consider aestheticism to have been the very foundation of Japanese civilisation, both material and spiritual[5]. And the pursuit of beauty, as Lafcadio Hearn pointed out long ago in his charming series of books on Japan, is almost a Japanese national characteristic.

It is significant how the Japanese attempt to reduce to art or give artistic expression to activities normally associated in other countries with utility and use. The games, sports and athletics of old feudal Japan, like archery, fencing (*kendo*), horseback archery (*yabusame*), football (*kemari*), etc., were all included under the term, *Geijutsu* or Art. Even a few years before the outbreak of the last World War, there was a movement in Japan to encourage and promote the inner spirit of the classical Japanese games, which was conceived as training in 'systematised artistic motion composed of movements with beautiful curves', rather than as mere physical exercises and contests.[6]

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[5] See Nyozekan Hasegawa's *The Educational and Cultural Background of the Japanese People*, p. 8.

[6] This movement for the revival of classical Japanese games was known as 'Nippon Ko-Budo Shinko Kai'.

Almost anything conducive to aesthetic enjoyment is subjected to a systematisation of details from the view point of art. Not to speak of the tea-ceremony, which is a national institution, and its elaborate system, even the arrangement of flowers in a room (the art of *Eke-bana*) must have its 'flower-masters', schools and manuals, and the arrangement of rocks in a landscape-garden must be backed by a symbolical garden-lore and based on recognised rules and principles. Observe the artistic sensitiveness about arrangement of rocks in a Japanese garden: 'Some stones at the skirts and in the fields should lie like fat sleeping dogs; others should look like frightened little pigs scuttering away; others like calves playing with their mother cow. Remember always in planting stones that, if there are one or two stones suggesting a flight, there should be seven or eight placed as if they were chasing these'[7].

It is an ingrained aesthetic feeling, an unfailing art-sense, but in its characteristic expression, how peculiarly distinctive !

The ancient Greeks, we are told, cherished 'order in Beauty' and the men of the Middle Ages and the later romantic revivalists of Europe sought after 'strangeness in Beauty,'[8] — and we may well ask ourselves, what is the special kind or quality of Beauty prized most by the cultured Japanese mind ? The answer may be gathered from an interesting side of the Muromachi-era art-culture of Japan during the Ashikaga Shogunate.

The Ashikaga Shoguns (1335—1573) as rulers enjoy no good odour in the history of Japan. But they were the Medici of feudal Japan in their patronage of art and culture. It was under this Shogunate that painting, porcelain, faience, lacquer work and damascening attained to the finest beauty of design and workmanship, while the *No* drama and the classical Bogaku music were developed under court patronage. The tone of the aristocratic culture of the age was set by some of the Shoguns themselves who commanded wealth enough, though by questionable methods, for the most expensive luxuries of any kind.

Yet we are told that 'they loved thatched cottages as simple as those of the meanest peasant, yet whose proportions were designed by the highest genius of Shojo or Soami, whose pillars were of the costliest incense-wood from the farthest of Indian islands ; even whose iron-kettles were marvels of workmanship by Sesshu'.[9]

This type of aesthetic culture became in that age the aristocratic culture of Japan,—the Daimyo hiding his costliest art-collections in the treasure-house and bringing out only one art-object at a time to satisfy his aesthetic sense, the Samurai keeping his blades of wonderful workmanship in unpretentious scabbards, and people wearing their costliest stuffs as under-garments.

The underlying principle of this aesthetic culture of feudal Japan has become her permanent cultural heritage. It is summed up in the Japanese term, *Shibumi*—the appreciation of beauty that is quiet and subdued, natural and deep, simple without crudity and austere without severity, avoiding instinctively, as it were, self-consciousness and ostentation. Perhaps in Keats' aesthetic approach to the 'Grecian Urn', we find something parallel to the Japanese *Shibumi*.

Inner Spirit of Japanese Art-forms

The art-forms of Japan recognise no principle or rule of scale, greatness or smallness being immaterial to expression or exercise of art in Japan. From

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[7] Harada's *A Glimpse of Japanese Ideals* p. 141.
[8] Walter Pater's *Appreciations* (postscript on *Classical and Romantic*).
[9] Longford's *Japan* (Nations of Today Series), p. 107 (quoting Brinkley).

painting in colours or in monochrome in Indian ink on silk or paper to the making of *inros* and *netsukis*, from largely planned landscape-gardening to the miniature *bon-seki*, from the ornate eves and sweeping curves of Buddhist temple-architecture to the simplicity of a Shinto shrine or a tea-cottage, we find Japanese art supremely regardless of scale-measurement.

Grandeur is, therefore, not its key-note. Being dependent on range and cale, grandeur in art is irreconcilable to the Japanese mode of workmanship; being striking and assertive in its nature, it is repellent to the aesthetics of Japan. The ele ents of the grotesque and the grand to be seen in the art and architecture of Nara, Heian and even later periods are unassimilated, dictated more by the spirit of imitation of the Chinese than by spontaneous temperamental preference. Such preference seizes rather on objects of small scale. 'They (the Japanese),' observes Dr.Nitobe, 'are great in little things'[10].

Japanese art-forms have not lacked interpreters, technical or historical, since Ernest Fenollosa. But what is most interesting from the cultural point of view is the presence in them of the plastic urge of certain conceptions, subtle and, to the uninitiated mind, somewhat crepuscular. They belong to the very outlook of the Japanese on life : they stand for sentiments and sensibilities, for which there are Japanese expressions, not easily translatable into foreign equivalents.

One may take for example the Japanese terms, *Sabi* and *Wabi*,—the former derived from Sanskrit *Shanti* (Peace) and the latter a Japanese term interpreted by Suzuki as 'the aesthetic appreciation of deficiency or poverty'. These terms yield us the key to the interpretation specially of some modes of Japanese painting. But they are not terms of art-criticism only, but embody cultural conceptions which indicate alike the spirit of *Cha-no-yu* or of *Tanka* and *Haiku* poetry.

Again, the exact shade of distinction between the two is all but refined away by the Zen doctrine of 'tranquillity' being only the other aspect of 'solitariness', thus making *Sabi* and *Wabi* like the two sides of a medal. Its manifestation, both in life and in art, lies in that kind of expression which, by its very retigence or incompleteness of form, becomes infinitely symbolical or suggestive, and which, by its bare solitariness, enriches and fills with significance the emptiness around it.

Definition of these terms is difficult, but how luminously they are illustrated by such classical legends as of Rikyu's showing only a single spray of morning-glory in a vase to General Hideyoshi who came expecting to see a display of it in Rikyu's famous gardens, and of Iyehara Jizen's effacement of all visible trace of bamboo in the surrounding gardens so that the bamboo vase, Onjoji, in the *tokonama* of the tea-room might yield the greatest possible intensity of pleasure to the visitor.

Likewise there are the terms, *Aware* and *Nasake*, translated respectively as 'the Way of Nature' and 'Compassion'. They enter largely into the motives of classical Japanese poetry. But we are told that 'the Japanese tend flowers in the spirit of *Nasake*,' 'the Japanese portrayed Nature as she presented herself to the eyes of *Aware* and *Nasake*,' 'great men are those who know the *Aware* of things,' etc. *Aware* and *Nasake* would thus seem to denote a range of sensibilities, so finely responsive that they vibrate, like the Aeolian Harp of the Greek fable, immediately to the lightest touch of the 'sadness of things.' With such sensibilities, conveyed in the peculiar tone of Japanese

[10] *Lectures on Japan*, 1936, p.319.

culture,—subdued and self-effacing, mellow and refined, symbolical and suggestive, the *Tanka* and *Haiku* poetry of Japan is replete.

Much ado is made in the aesthetics of the West about the relation between Nature and Art. But Japan in her oriental way does away with the duality and unifies both Nature and Art in terms of their common reference to the Spirit.

Let us observe for a moment the reactions of a cultured Japanese mind contemplating the natural scenery of Oregen (America) in the mellow grace and light of autumn: 'I was deeply impressed by *Shibumi* last fall, as I stood and watched the exquisite beauty of the scattering leaves of the birch trees covering the hillside near the campus. How symbolic of our life it all appeared to me as I stood and gazed upon the scene! In the eternal rhythm of life, we swing and flutter through the universe and alight on beds of fresh verdure to reflect the brightness of the sun for a while. A manifestation of a great truth in Nature in this quiet manner embodies the very essence of *Shibumi*."[11]

The *Shibumi* that is in Nature herself, translated into terms of human creation, is the *Shibumi* that is in art. Nature's modes for the satisfaction of the human spirit must also be the artist's modes.

Nowhere in the domain of Japanese art and culture do we realise this indentification between Nature and Art more intimately and more completely than in Japanese *Tanka* and *Haiku* poetry. In those of the poems in which Nature is touched upon,—and they constitute the over-whelming majority,—the subjective element is reduced to almost irreducible minimum. It is not transcript or impression or, far less, interpretation of Nature, but just,—snow falling on Fijisan, the cherry blossoming, the mist or rain over bay or landscape, cicadas buzzing, birds chirping and fireflies twinkling,—just Nature herself.

Japanese Poetry (Tanka and Haiku)

The *Tanka* and the *Haiku* become a touchstone of the inner quality of Japan's traditional culture by reason of the fact that this poetry is so entirely spontaneous, so completely unaffected by any foreign influence, both in origin and in expression. Other art-forms in Japan have been touched and modified more or less by influences from the Continent, but Japanese poetry, as Noguchi rightly observes, 'was never troubled by Buddhism or Confucianism',[12]

In their origin these poems are 'trifles of a moment', though ctriumphs for all time',—and the utter casualness of their manner of origin has been well hit off by a modern 'farmer' poet of Japan, Yasubumi, in an admirable *Haiku*, entitled 'On a Bull's Back'[13]. In their expression they represent the voice of all Japan from the divine Mikado to the farmer, the peasant and even the naked fisherman on the sea-shore. In the accents of the mingled voice, there are no distinctions of rank or class or occupation. And perhaps like the *Cha-no-yu*, the poetry of Japan by its very nature is insusceptible to any deep foreign influence.

Its Japanese character is innate. It catches intuitively the peculiar temper of Japanese culture and reflects intimately its most distinctive notes.

11 Harada's *A Glimpse of Japanese Ideals*, p. 221.
12 *The Art of Japanese Poetry*, 1914, p. 24.
13 See Asataro's *An Anthology of Japanese Poems*, p. 286

We have commented on the presence of Nature in Japanese poetry,—Nature almost wholly in her smaller, milder, more benevolent and gratifying aspects, though Japan has earthquakes daily and occasionally typhoons. The grand and sublime in Nature is hardly touched upon, except perhaps in the series of poems on the sacred mountain, Fujisan, beginning with Akahito's on Snowfall on Fujisan. As Nature is in the intimacies of daily life, so she appears in Japanese poetry, and where in the *Tanka* or the *Haiku*, the subjective note is allowed to enter in, unobtrusively as though through the strait door of a *cha-seki* (tea-cottage), with what delicate realism, what exquisite tact or 'touch-sense', the poet seizes on the immediate object,—the flower or the insect, the mist or the snow or the rain filling the atmosphere or dribbling through the 'pipe of emptying' !

The poems seem to defeat translation, for the foreign medium always stresses to loudness the subjective note, so studiedly reticent in the original. The translation attempts to make the poem *sing*, but this is exactly what the original never does or intends to do. The question suggests itself to the reader of Japanese poetry,— how far is this lack of expressiveness or rather positive non-expression determined by the temper of a culture, nursed by Zennism, in which to use Indian terminology, *Dhyana* (Meditation) is placed higher than *Dharana* (Understanding) ?

The fact that the *Haiku* mode became almost exclusively popular and remains so today in Japanese poetry,—it was Basho himself, the representative of Japan's central culture of the *Genroku*,who initiated and popularised it,—would seem to point to some affinity between a special cultural tradition and the characteristic poetic mode.

One may say indeed that Miyamoto's sketch of 'a singing bird on a dead branch,' Rikyu's showing of a single spray of morning-glory to Hideyoshi in the tea-room, and Basho's first *Haiku* on the frog splashing into the ancient pond are all conceived in the same spirit,—the *Sumiye* ('thrifty-brush' painting), the *Cha-no-yu* and the *Haiku* being unified by the same cultural quality,—call it *Sabi* or *Wabi*.

The East knows the secret of reducing form to symbol and also the value of a Symbol A symbol is nothing if not evocative: nothing if not a pointer or sign-post to the *Dhyana-loka* (Sanskrit : World of Meditation). In a cultural *milieau*, far different from the Indian, the Iranian poet voiced the spirit of the East when he declared :

> 'Yes, and a single Alif were the clue,—
> Could you but find it,—to the Treasure House,
> And peradventure to the Master too'.[14]

By utmost attenuation of form through excision of the last trace of the non-essential,—by surrounding a thing with blankness or silence,—by establishing it in its own 'solitariness' or 'tranquillity',—even a seemingly trivial thing or a slight form of expression may be made to ripen to a symbol and gather round it a world of meditative significance. In the principle of *Wabi* resides this creative magic :

> 'In my hut, this New Year's time, there is nothing,
> Which means that in it there is everything';[15]—

[14] Omar Khayyam's *Rubaiyat* (Fitzgerald's translation).
[15] A haiku by Bodo (included in Asataro's *Anthology*).

Haiku poetry is mostly play with this magic, and we may consider for a typical example the well-known 'Pond and Frog' *haiku* of Basho :

'An ancient pond,
A frog jumps in,
— The Sound of Water !'

To the uninitiated this *haiku* is bound to appear crude, trivial and somewhat absurd,——and indeed there are Japanese critics today who are inclined to regard it in that light. But the fact that Basho himself considered the composition of this poem as his real initiation into the true nature of Haiku poetry has invested it with an almost sacrosanct character. If the poem is not really trivial or absurd and has a value of its own, the essence of that value must lie in symbolism of some sort. The sudden 'sound of water' (*mizu no oto*), on which the poem seems to turn, would be a meaningless sound indeed, unless it ushered in a world of suppressed significance, inviting the reader's mind to explore it along ways 'not traceable by the understanding'. The philosophic mind in exploring it may discover truths of human life and destiny in implicit symbolism[16]; the poetically sensitive come upon only the mystery of 'a voice in voicelessness.' The English poet, Walter de la Mare, also conveys such a mystery in his well-known poem, 'The Listeners',——yet with what an expense of supernatural and romantic associations ! To the mystery itself these associations are extraneous, unessential.

A boat sailing away on Akashi Bay, the snowy cloud now round the peak and then at the foot of Fujisan (Harumi), the butterfly sleeping on the temple-bell (Buson), a camellia flower spilling water as it fell (Basho), the maple leafage growing beautiful before falling (Shiko), all these stand not simply for forms of beauty, for the form is extremely rarefied, but as symbols for the meditative spirit to dwell on. It is the spirit of *Wabi* that attenuates each image to the value of a symbol, so that the *haiku* transmutes itself into what an English critic, quoted by Noguchi, described it to be: "It is valuable as a talisman rather than as a picture. It is a pearl to be dissolved in the wine of a mood".[17]

Perhaps it was the realisation of the value of poetry as a fine flower of Japanese culture that prompted the emperors of Japan not only to compose poetry themselves, but also to compile monumental anthologies. The dignity of poetry used to be maintained by institutions like 'the New Year's Imperial Poetry Party', 'the Poetical Tournaments', etc., as well as by dedication of shrines to the ancient poet Akahito and the erection of 'Poetry Monuments' (*kahi*) by the disciples and admirers of popular poets.

It is well-known how in social intercourse, in aesthetic diversions and in temple-worship, the joy of poetry, 'in widest commonalty spread' in Japan, finds many a quaint and casual expression.)

16 Vide Harada's interpretation of the 'Mizu no oto'—*A Glimpse*, etc., p p. 32—33.
17 Noguchi's *The Art of Japanese Poetry*, p. 35.

ASIAN RELATIONS
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CHINESE AND INDIAN CULTURE: A Plea for Understanding

by

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GROUP D: CULTURAL PROBLEMS
TOPIC VII: CULTURAL PROBLEMS

INDIAN COUNCIL OF WORLD AFFAIRS
NEW DELHI

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CULTURE——CHINESE AND INDIAN :

A Plea for Mutual Understanding

China and India are ancient countries, but not living at the present time in their ancient past. They are trying to line up with modern progress with eager faces set towards the future. Both are struggling to realise a democratic set-up in political life ; both bent upon emerging out of an agricultural and mediaeval into a modern and industrial economy ; both keen upon the progressive ideals of the West. In the hurry for progress, however, there is always the risk, for nations as for individuals, of old possessions being lost or left behind. The most precious possessions of both China and India are cultural and they represent historical heritage.

Neither in China nor in India, what is past is altogether past. There are other ancient countries on the face of the earth where one drama after another of human civilisation has been played out and done with. After each performance, the stage has been cleared and the footlights have been blown out and the curtain has risen on a new one, and so on into the present era. Such ancient countries are Egypt, Mesopotamia, Iran, Greece and Italy. But in India, as in China, history has been a vast and complicated play of which the Fifth Act is not yet. What remains of the past in both China and India is not mere 'survivals in culture', but living ideals, formative traditions and active influences in all spheres of life. They are an inalienable legacy.

Towards this legacy the attitude of acceptance or otherwise will undoubtedly be a determinant factor in the future evolution of both countries. But the finest minds in China, as in India, have never doubted what the right attitude should be.

None in the last two generations in China has been so whole-hearted a modernist as Dr. Sun Yat-sen. Yet in his single-minded earnestness to bring the people of China into line with modern progress, he insisted on China's remaining loyal to her past. 'We must revive not only our old morality, but also our old learning;' says Dr. Sun in his Lecture 6 on *Nationalism*, 'Since our subjugation by the Manchus, our four hundred millions have been asleep. If we want to regain our national spirit, we must re-awaken the learning, as well as the moral ideas, which we once possessed'. Dr. Sun's insistence on a renaissance or a return to the past was not a sentimental longing, for never was a realist more clear-eyed, more free from romantic leanings.

Dr. Sun voiced only the old wisdom of Confucius's saying : 'To find the new, search the old.' The Confucian dictum is not a plea for conservatism, but for culture. For 'all culture', as a modern philosopher puts

it, 'implies an endeavour to prevent certain events, deeds and personalities from drifting into oblivion, an endeavour to keep them ever-present and living. There is no culture which does not call upon us to take up the challenge that is thrown down by Time'. It is the essence of this conception of Culture that the words of Confucius express.

The countries of Asia have no doubt to develop their own individual culture-types The process of history has brought them into existence and made them various in this Continent, but they all stand today in the light of a new ideal, the ideal of an Asian union. Nothing can subserve this ideal more effectively than appraisement and appreciation of each other's culture among Asian nations. It is only on the basis of a cultural understanding,—a recognition of each other's worth and community of purpose in the cultivation of the more fundamental things which belong to the mind and the spirit, that international co-operation, even in political and economic life, can grow to be something more that a matter of expediency and convenience.

As between China and India, the beginnings of such a cultural understanding were made more than a thousand and a half years ago.

Across deserts and mountains, China sent her pilgrim-scholars to ancient India, and her envoys across the seas to the eastern parts of mediaeval India when the Central Asian routes had been closed. The recalling of these memories is not mere academic trifling. The craze for modernity expresses itself sometimes in a contempt for history. Yet how profoundly true are the words of Eucken on the 'Eterna in History : 'Spiritually speaking, the past is by no means a finished story. It is always open to the present to discover, to stir up, something new in it Even the past is still in the making.' During Marshal Chiang Kai-shek's visit to India in 1942, there was a spontaneous, though momentary, stirring up of this ancient historical tale of Sino-Indian intercourse.

Buddhism constituted in the ancient past a golden link between China and India. In China, Buddhism survives in India, it is believed to be extinct. True it exists no longer, except in the outskirts of the country, as a form of religion, but it is inwoven with the very texture of Indian life and civilisation, and what is Brahmanical in Hinduism and what is Buddhistic can scarcely be separated. But far back in the past when Buddhism flourished in India as a living religion, Buddhist monks from China came out to India and their object was not only to acquire the spiritual merit of pilgrimage, but also first-hand knowledge of what they called the 'Buddha-land'. It is not known historically when this tream of Chinese pilgrims first began to flow into India: perhaps it was round the beginning of the Christian era Some of them left records of their experiences, three of which are outstanding, separated by wide intervals of time, viz., Fa-hian's *Fo-kwo-ki*, 'Record of the Buddha-country'(399-414 A. D.), Hsuan-tsang's *Si-yu-ki*, 'Record of the Western Lands' (629-646 A. D.), and I-tsing's

Nan-hai chi-kuei-nai-fa-chuan, 'Record of Buddhism written and sent back from the South Seas' (671-695 A.D.). The authors of these 'records' had travelled widely, visited numerous monasteries and centres of learning in India, studied Indian Buddhist scriptures, collected what legends had been rehearsed to them, and gave objective accounts of all they had seen and heard of Indian religions, life and manners. By far the largest part of our knowledge of India's ancient past is derived from these Chinese records.

But these Chinese pilgrims rendered also another service to India of which the value has not been fully assessed yet. They were anxious to increase the litbrary wealth of Chinese Buddhism and took back with them to their home-land copies of Indian manuscripts, as many as they could obtain and carry. Both Hsuan-tsang and I-tsing spent the remainder of their days, on their return from India, in translating these manuscripts into Chinese, and the former produced a huge number of translations going well into three figures. They are included in the corpus of Chinese Buddhist scriptures, of which several catalogues, of different epochs of Chinese history, are extant. In the nineties of the last century, one of these monumental catalogues was done into English by the Japanese Buddhist scholar, Nanjio. In these Chinese translations are locked up a treasure-house of knowledge of the doctrines and religious ideas of the ancient Indian Buddhists, and the key to this treasure-house remains in the hands of Chinese scholars.

When Buddhism declined in India and the rule of the Pathans was established in different parts of the country, a temporary set-back in intercourse between China and India ensued, chiefly because of the blocking of the usual trans-Asian route. China, however, launched upon a period of maritime development, and in the early years of the 15th century, the western sea-route to India *via* Nicobar Island was well established. Sino-Indian contacts made by this sea-route were mainly with Bengal for promotion of commercial exchange and diplomatic relations. There is no reference to them in the Persian accounts of the Pathan rulers of Bengal, but there are brief accounts in the 'history-books' of the Ming dynasty of China, which are being brought to light by the Institute of History and Philology of the Academia Sinica.

The old urges behind this long tale of Sino-Indian intercourse exist no longer. But the need for a cultural understanding between the two great countries of Asia, which history brought together in the past in a mutuality of culture, must be felt as a new urge in Asia's new international life. The historical tradition of their friendship can be carried forward today most fruitfully through a pooling of the intellectual resources of China and India for the promotion of this cultural understanding.

The great Sinologists of the West of the last century, like Julien, Legge, Beal, Watters and others, were the first to show how the ancient history of

China and that of India commingled and how the large blank spaces of ancient Indian history could at least be partially filled in by the records left in Chinese by the ancient Buddhist pilgrims to India. It is not history alone that will gain by a full unfoldment of the ancient story, for, implanted in cultured minds, both in China and in India, there is a certain awareness of and inquisitiveness towards their ancient past and its spiritual bequests to the present, which is not exactly archaeological or academic in complexion. The old generation of Sinologists has now died out and their unfinished work waits to be resumed. The need for it finds expression through the initiatory efforts of the Institute of History and Philology of the Academia Sinica of China and the Chee ia Bhawan of the Visva Bharati at Shantiniketan in India. These efforts have to be organised on a co-operative basis to be more fruitful of results that may tend to a fuller 'discovery' of India to the Indians and China to the Chinese and their cultural inter-relations through the ages.

A vast scope remains for comparative study and understanding in other fields than history,—for instance, in ethics and religion. The pronounced difference between the Chinese outlook on life and the Indian, besides being a study interesting in itself, will lead to a completer understanding of the divergent developments in ethics and religion in the two countries. The Zen Buddhism of China, the Indian derivation of which is well known, has yet to be interpreted by a competent Indian scholar. In fact, all the three ancient ethico-religious systems, which developed in China and still determine or influence the cultural outlook of the Chinese, viz., Mahayana Buddhism, Confucianism and Tao-ism, deserve to be studied by Indians and their leading concepts and principles analysed. The essential humanism of the Chinese outlook on life, centring in the doctrine of the Golden Mean, holds a message not only for Asia, but also for the rest of our war-torn world. Both Indian and Chinese cultural studies, not only at their points of contact, but also of difference, will acquire a clearer meaning, a better perspective and a more vital significance by the application of Chinese mind to Indian subjects and Indian mind to Chinese. Both Chinese and Indian scholars have been content so long to be camp-followers of western savants who made the pioneer explorations into orientalia. But the time has perhaps come for the intellectual resources of China and India to come into a scheme of co-operation, first, for a larger and more liberal understanding of Asian culture as China and India represent, and, ultimately, for a higher synthesis that will embody and enshrine the eternal, undying Spirit of Asia.

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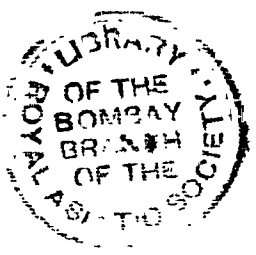
INTERNATIONAL AUXILIARY LANGUAGE

by

J. F. Bulsara



GROUP D: CULTURAL PROBLEMS
TOPIC VII: CULTURAL PROBLEMS

INDIAN COUNCIL OF WORLD AFFAIRS
NEW DELHI

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AN INTERNATIONAL AUXILIARY LANGUAGE.

I

Evolution tending towards irrevocable co-operation between races of mankind for mutual good.

From historical events as developing in the twentieth century, it may be said without exaggeration that it will go down in history as par excellence a century of internationalism. Not only have international thought, contacts, commerce and cultural inter-change taken firm roots in a fertile soil from the beginning of the century but the force of events and circumstances is leading groups of mankind or peoples and nations into a closer politico-economic, social and cultural interrelationship whether individuals and groups like it or not. There is now no going back for the world at large into isolationism. The evolution of man indicates that the three races of mankind, Negro, Mongol and Aryan, with their inter-mixtures in the five continents and oceanic islands, are now irrevocably set in the direction of mutual co-operation for common good, if they wish to see their civilization survive and prosper and avoid a perennial internecine conflict, which may throw them back into primitive barbarism if not to their ultimate doom or destruction.

Co-operation on a global basis will lead to greater material, moral and intellectual achievements and individual happiness.

It does not require great wisdom or deep foresight to see that before man ultimately decides to annihilate himself and his civilization by perpetual war or economic competition, which finally ends up in economic anarchy and war, he will still have a few decades to live in still closer contact with one another. We have hopes that in this interregnum he will develop sufficient wisdom and insight to understand that he is not really a loser if he follows the golden rule of live and let live, that union is strength as much when the principle is applied to politically distinct groups as when it is applied to members of a family or individuals of a political, social or economic unit. I do not think even the nations and groups with a higher standard of living, which does not necessarily mean a higher level of culture or self-realisation, will suffer in the long run by pursuing the principle of mutual co-operation and adjustment for the benefit of the whole human family on earth. By such co-operation for common weal on a global basis, they will find that not only does the sum total of human happiness and material, moral and intellectual achievement increase, but that the contents of individual life also become fuller, richer and more complete by such co-operative effort, as inevitably there will be much less wear and tear of life involved in unending struggle, strain, clash and competition.

The crying need for an international auxiliary language.

If it is conceded that for their overall good, all the diversified races of mankind should co-operate in mutual good-will towards objectives beneficial to all the co-operating parties, in a world of 2,100 millions, who, according to the computation of the French Academy, speak 2,796 languages between them,[1] there is clearly a great and crying need for an international auxiliary language which may be easily studied and understood by the multi-lingual peoples of our planet, through which contacts between them could be established with ease, and thoughts, ideas and good-will exchanged without the embarassing intervention of interpreters, who destroy the human touch of direct relationships. Imagine a lover and beloved, husband and wife, or brother and sister making love or exchanging goodwill by means of an interpreting or dividing intermediary !

International media of intercourse developed from pre-historic times.

Although peoples of the four corners of the globe are now drawing together for various reasons and purposes as never before in human history, it must not be imagined that there was no international intercourse in mediaeval or ancient times. There were contacts and interrelations between peoples speaking different tongues not only in historic epochs, but, as anthropologists and archaeologists tell us, there are traces of such contacts, commercial, cultural and others, even in pre-historic times between the primitive tribal peoples of Europe, Asia, Africa and America. Right from the dynastic period in Egypt, *i.e.*, about 6000 years ago, the need for a language of inter-communication was felt by the peoples of Egypt, Sumer, Akkad, Babylon, Assyria and Asia Minor. Later on this need was satisfied by the adoption of the Babylonian language for inter-communication between these peoples of the Mediterranean coasts. Its place was later taken by Greek and still later by Latin. Latin in fact remained the common medium of intercourse between the closely inter-connected contiguous peoples of the European countries almost up to the seventeenth century, until the modern European languages developed more fully and national patriotism and constant wars and resulting national antagonisms enforced a separatist tendency in the educational policies of various European countries. The need for a common language of intercourse was however so keenly felt in the political as well as economic and commercial fields that French came to be recognised for a long time as the language of diplomacy and English as that of international trade, commerce and finance.

This need of a common language for human intercourse was satisfied in the vast land mass of China with its many peoples speaking many dialects by written Mandarin which was uniformly understood by the scholars all over China, while a similar need in the early Aryan period

[1] The World Almanac and Book of Facts—1942—p. 530, published by *The New York World Telegram*—a Scripps-Howard newspaper.

in India was met by Sanskrit and later on, on the impact of Islam, by a mixture of Indo-Islamic languages giving rise to Urdu and Hindustani, which are destined to become the lingua franca of an independent and unified India. The same need in the Middle East was satisfied in the earlier Iranian and Hebraic periods by Persian and Hebrew and from the mediaeval times onwards till now by Arabic, the language of the Holy Koran.

Thus it is evident that the inter-connected regions of the earth, with their diversified peoples speaking many languages or dialects, have always stood in need of a commonly understood medium of inter-communication and various languages have fulfilled this need from time to time. The number of persons, however, speaking such a commonly recognised inter-lingua has so far never been large, as the respective inter-languages were learnt or studied by a relatively small number of people in the Courts of various empires or kingdoms, a few travellers and tradesmen and still fewer professional translators or interpreters. Thus amongst all the above languages enjoying at one time or another an international status, English has been the only one which has been studied, spoken and understood on a fairly extensive scale both in numbers and by distinct peoples of the world, it being estimated that about 200 million peoples of Great Britain, the U.S.A., the British Dominions, countries of the British Colonial Empire, China and others speak the English or what linguists now call the Anglo-American language.

The practical necessity therefore of a medium of global, hemispherical or regional inter-communication has been felt all throughout the history of man. But the need has been felt more and more intensely in Europe from the nineteenth century, and in Europe, America and Asia from the beginning of this century onwards. This can be illustrated from the fact that from the time of George Dalgarno (Ars Signorum-1661), and Bishop John Wilkins (Essay Towards a Real Character and a Philosophical Language—1668) in the seventeenth century till now, more than 300 attempts have been made for forming or building up an international auxiliary language, almost of them in Europe, and based on Latin, Greek, Greeko-Latin, Romanic and Teutonic stocks of words or roots with Ogden's Basic English as one of the more recent and determined attempts. Fortunately or unfortunately none of these has met with any appreciable success so far, and a further attempt is being made at present by the International Auxiliary Language Association of America (Columbia University) to formulate an international auxiliary language based on the Romanic and Anglo-American stock of words or vocables, in which the Rotary International is also greatly interested and taking an active part.

Some Constructed or Auxiliary Languages.

Some of these auxiliary languages which held the field for some time or another and a few of which are still drawing more or less attention are as follows:—

1. *Volapük* —by FATHER JOHANN MARTIN SCHLEYER of Germany (1880).
2. *Esperanto* —by DR. L. L. ZAMENHOFF of Poland (1887).
3. *Ido* —by MARQUIS DE BEAUFRONT and PROF. LOUIS COUTURAT of France (1907).
4. *Idiom Neutrai* —by VOLDEMAR ROSENBERGER of Russia (1893-1898).
5. *Interlingua* —by PROF. GIUSEPPE PEANO of Turin (Italy) (1904).
6. *Universal* or *Panroman* —by DR. H. MOLENAAR (1903-1906).
7. *Medial European* —by JOSEPH and BETTY WEISBART.
8. *Occidental* —by E. VON WAHL (Reval).
9. *Romanal* —by DR. A. MICHAUX of Boulogne-Sur-Mer.
10. *Novial* (New International Auxiliary Language) —by PROF. OTTO JESPERSEN of Copenhagen—(1928).
11. *Basic English* —by PROF. C. K. OGDEN of Great Britain (1930).
12. *Interglossa* —by PROF. L. HOGBEN of Africa and Great Britain—(1943).

Among the above, Volapük had once a great vogue which was later snatched by Esperanto, which is still studied in various parts of the world. There are various Esperanto Associations or representatives in several countries of the world, the headquarters of the British Esperanto Association, Inc. being in England (140, Holland Park Avenue, London W.11). With the tremendous and powerful pull of Anglo-American as a language both of world-wide commerce and diplomacy, Basic English promised at one time to be widely studied and Mr. Winston Churchill gave it great significance in his war-time speeches. But with the usual jealousy of sister languages and countries, there does not seem to be much hope for a natural spoken language of any country acquiring the status of a world language or an international auxiliary.

II

Which existing natural languages can claim world attention?

Besides international jealousy, however, there are several substantial reasons why a natural existing language of any country cannot and perhaps will not be adopted or adapted as a world language. Before we consider these reasons, let us enumerate which of such evolved existing languages can claim such world attention in the present world opinion and circumstances. They are:—

• *English, French, Spanish, Russian, Chinese, Arabic and Hindustani.* They are spoken or understood roughly by 270, 68, 102, 170, 420, 40 and 260

million peoples respectively.[1] English, French and Spanish are not only spoken and studied by the respective nationals of the home countries but also by the peoples of other countries, English being spoken more or less in all the continents, French in Europe and the near and middle eastern Moslem countries, in parts of Canada and Indo-China, and Spanish in South America with some influence in the Philippines. Russian is spoken in parts of Europe and Asia by some non-Russian peoples, whereas Hindustani and Chinese are spoken respectively in the major part of India and in China, Cochin-China, Indo-China, Straits Settlements, and such other regions where a large Chinese population has migrated and settled.

Why any living national language cannot be adopted as a World Language.

Among these seven languages, significant because of their international spread or because of their being the mother tongue of a very large section of world population, English can legitimately claim the first place for recognition, if we are inclined to think that an existing natural language can be adopted as an international medium of contact and communication. But almost all savants and committees consisting thereof, who have given deep thought to this question of a world language have come to the conclusion that no living language, not even English, can be adopted as such even after simplification or standardisation, if at all there is any hope of inducing the peoples speaking Anglo-American to adopt such methods at simplifying and standardising their mother tongue in order to oblige the rest of the world and satisfy an internationally felt need. Let us now enumerate the reasons why it is not advisable, politic, wise, economical or convenient in the long run to adopt any of these seven languages as a world language:—

(1) *All natural languages, evolved and constituted as they are, are difficult to learn and master for non-nationals whose mother tongues they are not.*

What a Chinese delegate to the Educationists' Conference in Geneva said about the study of some European languages sums up in a nut-shell the attitude and position of all of us as regards the study of any existing foreign tongue, viz.:

> "In China we learn the English language during at least six years; French seven years; German eight years; Russian ten years, but for Esperanto only two years are required".[2]

(2) *All natural languages have a complex grammar, profuse grammatical peculiarities, and an alarmingly large number of irregularities, not*

[1] German is spoken by about 80 million people and the Teutonic stock of languages like Dutch, Danish, Swedish, Flemish, etc. by about 30 million more people. (*The World Almanac*—1942—op. cit.)

[2] E. Sylvia Pankhurst—Delphos—The Future of International Language—p. 40.

necessary for the efficient functioning of a language as a precise and effective medium of communication, instrument of thought and implement of meaningful human behaviour.

English and Chinese have gradually shorn themselves of several grammatical rules and peculiarities and they have perhaps the most simplified grammar of all the natural languages, though by no means the minimum required. But others have still too much and too complicated grammar to permit themselves to be selected as a general language of masses of mankind at all levels of culture or civilization.

To illustrate,

(*a*) none has a straightforward rule for *genders*. The following are some typical examples in English, viz.:

Animals:	Horse	(mas.)	Mare	(fem.)
	Lion, Tiger	(„)	Lioness, tigress	(„)
	He-goat	(„)	She-goat	(„)
Humans:				
	Man, boy	(„)	Woman, girl	(„)
	Prince	(„)	Princess	(„)
	Male	(„)	Female	(„)
	Gentleman	(„)	Lady	(„)
	Executor	(„)	Executrix	(„)
	Viceroy	(„)	Vicereine	(„), etc.

The genders in other Aryan and Semitic languages follow still more complex and circuitous rules, even non-living things, objects and phenomena having masculine or feminine genders according to the group or class of endings to which the vocables belong.[1]

[1] A few more examples are taken from French, Spanish and German by way of further elucidating this maze of irregularities or inconsistencies:—

English	French	Spanish	German
Air (n.)	l'air (m.)	el aire (m.)	die Luft (f.)
Altar	l'autel (m.)	el altar (m.)	der Altar (m.)
Apple	la pomme (f.)	la manzana (f.)	der Apfel (m.)
Bacon	du lard	el tocino (m.)	der Speck (m.)
Battery	la batterié (f.)	la bateria (f.)	die Batterie (f.)
Beer	de la biére	la cerveza (f.)	das Bier (n.)
Blood	le sang (m.)	el sangre (m.)	das Bloot (n.)
Box	une boite (f.)	la caja (f.)	der Kasten (m.)
Book	le livre (m.)	el libro (m.)	das Buch (n.)

(*b*) Taking the *plural* of nouns, we are faced with the following in English, whereas in other languages also there are more or less similar irregularities:—

Dog	—	Dogs	
Man	—	Men	Mark the change of pronunciation.
Woman	—	Women	
Child	—	Children	
Baby	—	Babies	
Story	—	Stories	Mark the similarity of pronunciation and difference in spelling.
Storey	—	Storeys	
Ox	—	Oxen	
Fox	—	Foxes	
Sheep	—	Sheep	
Ship	—	Ships	
Buffalo	—	Buffaloes	
Hobo	—	Hobos or Hoboes	
Hippopotamus	—	Hippopotami	
Virus	—	Viruses	
Zebra	—	Zebras	
Amoeba	—	Amoebi	
Bacterium	—	Bacteria	
Premium	—	Premia, Premiums	

(*c*) Coming to *verbs* and *tenses,* we observe similar irregularities in formation, whereas the flexions or changes in the word structure to mark case, gender, number, tense, person, mood, voice, comparison, etc. in all inflectional languages are most bewildering to the student studying any language other than his mother-tongue.

These grammatical complexities and irregularities, whatever function they performed in the evolution of the natural languages all the world over, and they were more in the earlier stages of their development than now, they do not help in the better or easier mastery of the languages but rather clog or hinder easy expression. Whatever justification they may have had in the growth of a language, perhaps by way of helping to enrich expressiveness or giving concrete shape to new nuances of thought, appropriate linguistic behaviour and the manipulation of the tools of communication, most of them have lost their historical or evolutionary function and purpose. Most of them now act as so many clogs on the mechanism of language or spanners in the smooth and swift-moving wheel of semantic expression. All languages have been slowly or rapidly tending towards the simplification or regularisation of their complex rules of grammar, grammatical irregularities, word-forms and word meanings, but they have succeeded very partially. The dead weight of convention, tradition, authority, habituation and inertia in the

use of language is so great that natural languages are not likely in the existing circumstances to extricate themselves from this evolutionary dross that has clung to their garb, style and fashion.

To revert to the *verb* and its *moods, participles* and *tenses,* we have the following in English, which has a much simpler grammar of verbs and tenses than most other Aryan, Semitic, Mongol or Bantu tongues except perhaps Chinese, viz.

Love	— loved	— loved	— loving	}	Mark the difference in
Move	— moved	— moved	— moving	}	pronunciation.
Bite	— bit	— bitten	— biting		
Bid	— bade	— bidden	— bidding		
Sit	— sat	— sat	— sitting		
Split	— split	— split	— splitting		
Win	— won	— won	— winning		
Spin	— spun	— spun	— spinning		
Grin	— grinned	— grinned	— grinning		
Run	— ran	— run	— running		
Go	— went	— gone	— going	}	Mark the difference in
Do	— did	— done	— doing	}	pronunciation.
Say	— said	— said	— saying		
Lie	— lay	— lain	— lying		
Lie	— lied	— lied	— lying		
Cry	— cried	— cried	— crying		

One can go on in this way showing the idiosyncracies and inconsistencies of the existing languages, but our purpose is not to find fault, because these highly evolved instruments of thought, expression and communication have served in every community as a great civilising and progressive force, liberating man from his animal heritage, his mind from the cobweb of chaos, and putting him at once on a high pedestal of culture vis a vis the entire animal kingdom. But it has to be understood also that language has evolved with the evolution of human society; and whereas it has participated in a full measure in the gradual progress of man's manual skill, mental intelligence, and rich variety of experience gained through peaceful contacts or clash of ideas and cultures, it has also shared man's ignorance, inexperience, continuous trial and error method of development, his vagueness of thought, his confusion of concepts and categories. Language perhaps has been more coloured than any other artifact of human civilization by man's groping from darkness to light, ignorance to knowledge, confusion to clarity, chaos to orderliness. Any one who delves into categories, concepts, logic, philosophy, syntax, grammar, sentence landscape, word-forms, flexions, meanings, vocabulary —in fact any part of our mental phenomena that has to do with language —will easily understand these drawbacks of the existing languages. We shall therefore finally touch upon one more aspect of grammar and word-structure and then pass on to other considerations as to why it is not advisable to adopt an existing language, even English, as an international lingua franca.

(*d*) Let us turn to *nouns* or names of things and qualities, to *verbs* denoting activity, operation, existence, etc., to *adjectives* that qualify things or qualities, and *adverbs* that qualify verbs. We do not find relative consistency either in the formation of vocables one from another or in their meanings.

Thus if a person takes away slyly, dishonestly or cunningly a thing that does not belong to him or her, he is said to *steal* or *pilfer* it. But he is not ordinarily called a *stealer* or *pilferer* like the one who is called a *mover* if he moves and a *speaker* if he speaks. He is called a '*thief*'. However, a *lover* is ordinarily said to love, and a '*boaster*' to boast, but a *thief* is not ordinarily said to *thieve,* he is said to *steal.* Now an act of thieving is a '*theft*', but that of stealing is not necessarily a *stealth;* the act of *conceiving* is not a *concept* but *conception,* or both are rather the result of conceiving. Whereas we would commonly say, ' a theft occurred in somebody's house,' it is not common nor quite correct, colloquial, conventional or idiomatic to say ' a stealth occurred in somebody's office or apartment '.

Taking up another aspect of vocabulary and meaning, a good looking woman is said to possess *beauty,* and having beauty she is called *beautiful.* But a mere man, however good looking, can only be *handsome* (dexterous). Further, whereas a woman with beauty is *beautiful,* one with *charm* is not *charmful* but *charming.*

When you *like* someone, you are said to have a *liking* for him, but if you *dislike* somebody you cannot have a *disliking* for him but only *dislike.* So when you *warn* someone, you give him a *warning,* but when you *scorn* someone, you do not give him a *scorning* but only *show scorn.*

Such and other types of instances can be multiplied a great deal, showing what maze of experimentation almost every word of an evolved language has passed through, and why existing languages cannot serve as a universal medium of scientific or systematised thought, effective or efficient communication, or a precise and exact vehicle of human expression.

(3) *All the existing languages including English have an* EXCESSIVE *vocabulary, a part of which suffers from vagueness and ambiguity inevitable to any evolved and still developing medium of human intercourse, and a part of which, comprising synonyms, is* REDUNDANT.[1]

Some illustrations of vagueness and redundance have already crept into the examples of linguistic complexities and irregularities quoted above. We shall therefore satisfy ourselves only with two or three examples of vagueness or ambiguity of meaning and redundance of vocables. Some might think that these would be found mostly in the

[1] The reputable English language contains approximately 700,000 words; nearly one-half of these consists of scientific terminology (seldom met with outside text books), and of archaic, obsolescent or obsolete terms.—*The World Almanac*—1942.

realm of words expressing concepts and metaphysical or philosophical terminology. But it is not so. They are to be found in the realm of everyday intercourse and words naming, expressing or describing visible phenomena.

Let us take the word *sky* and ask five members of any audience the meaning thereof. Immediately we will find them fumbling for words and trying to locate the concrete referent behind the very common and supposedly concrete vocable. For, in ordinary parlance, few would have raised any issue of meaning of the word *sky*. Yet referring to dictionaries, which are supposed to be the final authorities of appeal and guidance, we get the following:—

(a) *Webster's Collegiate Dictionary* (1932)—
  (i) The upper atmosphere; the region of clouds, storms, etc.; hence the weather.
  (ii) The heavens; firmament.
  (iii) Heaven.

(b) *Collins New Gem Dictionary (Pocket-year not given)*—
  (i) The apparent canopy of the heavens;
  (ii) The heavenly regions.

(c) *The Concise Oxford Dictionary of current English* (1934)—
  (i) (The vault of) heaven;
  (ii) Climate; atmosphere;

(d) *Odham's Dictionary of the English Language* (1946)—
  (i) The aerial region which surrounds the earth;
  (ii) The apparent vault of heaven;
  (iii) The Heavens; (fig.) the prospect, situation (O. Icel.-sky).

It will be seen from the above that it is difficult to get at the correct, much less at the exact meaning of such a commonplace word of frequent use as the *sky*, which infants must be learning from the lips of their mothers at a very early stage, and which scientists use as often in daily conversation. The dictionaries confound rather than help us. Each lexicographer has tried to work out the probable meaning of the word according to his light and understanding. If the word refers to the *atmosphere*, to *space*, to *clouds*, to the *upper region*, to the *stars* and *planetary bodies*, or vaguely refers to an *ensemble* of these, why not say so directly and use the very words? Such parallel words or vaguer synonyms as *heavens, vault of heaven, firmament, region of the clouds and storms* do not help us at all to understand the true or exact meaning of the term; they create additional confusion and tax our memory unnecessarily. The student, who uses the dictionary to find out the meaning of the word *sky*, will have to consult the dictionary further for the meanings of the words, *atmosphere, heavens, vault of heaven,* and *firmament*. He will not be wiser at the end of his labour with regard to the meaning of the word *sky*.

The true reason is that we have in many such words a remarkable linguistic phenomenon of the ancient heritage of human ignorance handed down to us throughout ages of our evolutionary history in our language and linguistic forms and structure. Language was necessary and was framed *ad hoc* by early primitive man when he had little science, little sense of analysis, little chance of close observation and vivisection of his ideas or observations. He lisped in words in that stage, for words came or were necessary. Words were even clothed at the time in a body and had a life and soul of their own like so many other insentient things and phenomena. Such thoughts as 'In the beginning was the word', 'Sanskrit or the divine tongue was the language of the gods and angels' had real significance for our earlier forefathers. Many primitive communities invest words with magic significance to this day. Some linguists think that the confusing maze of genders of names referring to living things and non-living objects in most languages take us back almost to the totemistic beliefs of our very early ancestors.

The conception of '*sky*' and its equivalents in most Aryan and other language groups is vague, for, the phenomenon was not scientifically understood. Through the help of science and the accumulated knowledge of discoveries of centuries, we now know that there are the atmosphere, stratosphere, ionosphere, there are stars and planets, there is space, but there is no such thing as a '*sky*', *le ciel, il cielo, der Himmel, 'Akasha', 'Asman'* or an inverted aerial parallel to the earth, with which generally it has been superficially contrasted in most languages.

As soon as we understand this linguistic riddle of the existence of words inherited from man's infancy and ignorance but without relevant concrete referents behind them, we will clear our minds of an enormous dross of misconceptions and metaphysics and see light more clearly. For example, as soon as we unlearn this linguistic mirage or miasma of the *sky,* we begin to appreciate much better and more clearly the so-called abstruse, mathematical notions of Einstein's theory of relativity and such expressions as *curved space, finite universe, space is curved because of the presence of matter interspersed in it,* etc.

Let us take one more word to illustrate the point of our being loaded with the heritage of man's earlier inevitable ignorance, which load we have unfortunately to carry daily and hourly in our language behaviour, and which compels us to use words which are vague, confusing and inaccurate from the scientific standpoint, thus affecting our totality of behaviour patterns, our responses to linguistic and other physical external stimuli, our reading, description and understanding of natural phenomena. *Spirit, soul, mind, matter, nature, ghost, god,* are some of the words of the same category and very similar origin, whereas *culture, civilization, religion, capitalism, category, universal, absolute, infinite, time,* are some other words trying to express by a single, static linguistic form or voeable a whole gamut of social, dynamic and evolving notions, ideas or phenomena of thinking man. This man himself and his whole

being and knowledge are developing almost daily, yearly, decade by decade, century by century, era by era, and static verbal forms thus naturally fail adequately to express a changing and dynamic meaning or physical or social phenomenon. In the new language that we propose to construct this aspect of linguistic inertia or static, symbolic inadequacy will have to be given close attention to and properly allowed for in attaching meanings to linguistic terminology.

Taking now an example of vague words, let us quote the dictionary meanings of a very interesting word, viz. *spirit*:—

(a) Webster's:—(Latin—Spiritus; from '*spirare*' to breathe).

(1) The breath of life; life, or the life principle conceived as a kind of breath or vapor animating the body, or in man, mediating between the body and soul;

(2) The life principle viewed as the 'breath' or gift of deity; hence the agent of vital or conscious functions in man; the soul;

(3) (Often capital) In the abstract, life or consciousness viewed as an independent existence;

(4) (Cap.) A part of the divine nature; Holy Spirit;

(5) Any supernatural being; apparition; spectre, ghost; sometimes a sprite, fairy;

(6) An individual, person; especially with reference to characteristics of mind or temper; as a bold spirit;

(7) Temper, disposition, or attitude of mind; mood; (often in plural)—as to be in good *spirits;*

(8) Liveliness, energy, vivacity, courage, *etc.* as to act with *spirit;*

(9) Animating or controlling principle, quality or idea; hence intent, real meaning as the *spirit* of a law;

(10) In nature any volatile or airy agent or essence.

(11a) *Alchemy*—Any of the four substances, sulphur, sal ammoniac, quicksilver and arsenic (orpiment);

(11b) In old chemistry—Any liquid produced by distillation; in modern use, any strong, distilled alcoholic liquor; especially ordinary or ethyl alcohol, the *spirits* or *spirit* of wine (it having been first distilled from wine); often in plural;

(11c) In Pharmacopoeia—A solution in alcohol of a volatile principle;

(11d) Dyeing—Any of various solutions, especially of tin salts, used as mordants; as in tin *spirits,* aniline spirit, etc.

(12) Grammar—Spiritus—now rare—*Synonyms*—fire, animation, cheerfulness, vivacity.

As a *verb* the same word has the forms of *inspirit, spirit up* and *spirit away* meaning to animate with vigour, to encourage, and to convey rapidly and secretly; to kidnap.

As an *adjective,* the word *spirited* means ardent, animated, lively, vigorous, mettlesome, fiery; whereas the word *spiritless* has an opposite meaning. The word *spiritous* (refined, pure, like spirit) is now rare.

The same source gives us further interesting examples of word forms based on vagueness such as *spiritism, spiritual, spiritualist,* and *spiritualism* and various schools of philosophy, not to speak of individuals giving them varied meanings.

Here is a word dealt with deliberately at such length to show what part words play in the history of human thought and knowledge and how they become a help to style and variety of expression or a hindrance to precision of thought, and how we have to avoid certain definite pitfalls which all existing languages are heir to, owing to their evolution from the early stages of human infancy to scientific manhood. The above example will also show what an enormous number of redundant or unnecessary words or synonyms have crept into the existing language and how English or Anglo-American suffers from this redundancy the most. This cannot be exemplified better than by referring to the claim of Prof. C. K. Ogden of the Basic English fame, who says that 850 basic words+17 pronouns,+32 numerals+56 flexions, i.e. 955 vocables with -ed and -ing words in Anglo-American can do the work of about 10,000; and that they are enough to enable the student of Basic not only to carry on simple, every day conversation, but that with about 50 more technical words in each subject like Economics, Politics, Biology, Chemistry, etc., he can carry on intelligently and intelligibly discussions in international gatherings on the respective subjects. This claim is not quite so fantastic as it sounds and one has to admit that an unrestricted growth of vocables, synonyms and nuance words has made almost every existing language a rather clumsy machine to master easily by an alien not used to it from childhood. It has further created a big and undesirable gulf between the so-called masses and classes or the learned and the merely literate of every community with a common language, intensifying the already existing class distinctions. Our constructed language will have to avoid these pitfalls and deficiencies if such a world language is to be easy to learn and remember, economical in vocabulary, precise and logical in expression, and a good instrument of clear and concise thinking.

There are several other disabling reasons besides the above owing to which an existing language cannot be adopted as a world language, but we shall now only briefly refer to three important ones and then pass on to examine why we cannot adopt one of the constructed languages such as Esperanto, Novial, Interlingua or Interglossa as a world language, what we consider to be the fundamental requirements of such an international auxiliary language and how we can set about achieving one.

The three further reasons are:—

(4) *Every existing language has its* IDIOM, *which it will be difficult to keep under check as it should be for purposes of world understanding.*

(5) *The* SCRIPTS *or* ALPHABETS *of all the above languages except the Devanagari script of the Hindustani language are non-phonetic and it would be advisable to use a phonetic script easy to write and print for our new constructed language, as such a phonetic script will save a great deal of time now spent in learning to read unknown words.*

(6) *Particularly as regards English, German, Russian, French and some other languages, natural and constructed, the* CONSONANT-CLUSTERS *are not easy to learn and pronounce not only for non-Europeans but also for many Europeans themselves.*

Idiom:—To consider the above three points of Idiom, Phonetic Script and Consonant-clusters in a little greater detail, we know for a fact that every language has its idiom and idiomatic expressions. The idiom changes from century to century, generation to generation and sometimes even decade to decade as happens during wars and national upheavals, the idioms having particular reference to great men, thinkers, poets, politicians or statesmen, to outstanding events, to national or local colour and context. Thus we find the entire language structure, idiom and meanings of words undergoing slow but perceptible changes as time elapses, and hence the Chaucerian, Shakespearean, Baconian, Victorian and King's English, the Cockney dialect, the Yorkshire brogue, the American English and the slang.[1] This kaleidoscopic use, expression and idiom is fundamental to every natural, evolving language and it is not possible to check or control it in the case of a living national language as it would be fundamentally necessary to do with regard to a language to be used for world currency. If the use, expression, meaning and idiom of the international auxiliary language were not kept relatively uniform and universal by some machinery (like the Academie Francaise for instance for French), devised to check all vagaries and individual fancies, in a very few years we will have dialects of the inter-lingua as numerous as those of Chinese, and the people of one country will find it difficult to understand those in another when visiting or travelling through it.

Now if we cannot control the idiom of an existing national language, it is not wise or advisable to have that particular language as a world language, for our requirements of a world language are fundamentally different. We cannot allow local colour, context or idiom to be added arbitrarily to the meanings of our words or vocables which will have to be relatively uniform, universal coins or tokens, to be used, exchanged and understood in one sense all the world over and particularly in all important international gatherings, political, economic, social or scientific. We cannot afford to have local idioms like 'How do you do?' or 'I was taken in or taken aback', when the same can be more easily and naturally said by 'How are you' and 'I was deceived or surprised'.

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[1] 'Possibly 300,000 more terms (over the reputable 700,000) may be stigmatised as nonce, obsolete, vulgar, low, etc., and therefore, seldom or never sought in dictionaries designed for the home' (*The World Almanac*—op. cit.—p. 9.)

Phonetic Script:—A phonetic script is a very great help to learning a language easily. For, once you master the alphabet of a limited number of vowels and consonants, which can be done in an hour or two at the most, the reading part of language learning would be very easy. This is not possible in the case of a non-phonetic, unscientific and unsystematised alphabet like the Roman. And whereas a lot has been said about non-European countries adopting the Roman script to write their languages in, those who have given deep thought to this problem will hesitate to recommend the adoption of the Roman script as a script for the world-language. This can only be done if we have no phonetic script available ready at hand or we are unable to formulate one. But not only have we got an excellent phonetic script in the systematized and scientific Devanagari alphabet, but we feel it is possible to have an improvement on that, only if a few well-versed minds apply themselves to formulating one from simple strokes, curves, dots and dashes, which would be quick to write and easy to recognise. Thus the script of the interlingua can become the model for all other scripts if they wish to adhere to phonetic expression.

One need not stress the obvious that in the Roman alphabet *c* has the sibilant sound of *s* and gutteral *k*, so that *c* becomes redundant (e.g. *cephalic*); and if *k* can serve the purpose, one wonders why *q*, *ch* and *ck* with a similar sound are further required as in *quick* or *chorus*. *g* has the gutteral sound of *g* and lingual *j* (e.g. gorge); *f* and *ph* give the same sound; *v* and *w* always give a headache in pronunciation to those not speaking English as their mother tongue (e.g. wise, vow, vowel), *z* has two sounds as in English *zinc* and German *zoll* (ts), whereas *s* gives two sounds as in *silver* (c) and *measure* (z).

The vowels like *a, e, i, o, u* and the so-called semi-vowel *y* are still worse, for, each of them gives different sound values in different contexts, e.g. fat, father, grape, currant, claw; *eleven* (three sounds of *e* in one word), eatable, wed, weed; kit, kite, cried; do, to, go, so, old, blood, blossom; uncle, union, ursa major; yard, ugly, cry; There are further orthographic and pronunciation peculiarities as found in words such as *dough, rough, cough, through* and in homophones like meet, meat (contrast sweet, sweat); feet, feat, feit; fain, feign, fane, phane, etc.

In other European languages such as Teutonic, Romance and Slav, the same vowels and consonants have still different and more peculiar sound values, so much so that spelling and pronunciation become a nightmare to all students, European or non-European, who are alien to the particular tongue under study. We cannot therefore feel enthusiastic about adopting such an unsystematised alphabet or script as the Roman for our world language.

Consonant-Clusters:—The number of consonants coming together in a very large number of words in European languages like English, German, Dutch, Swedish and Russian as also in Chinese makes them very difficult to catch, understand or pronounce with ease and accuracy.

Station, Strict, Straight, Standard, Stigmatise; precept, perception, consternation, fratricide, vicissitude, wriggle, yacht, exemplary, frankenstein, disinterestedness, disciple, hoemorrhage, etc. are some of the words in the English language, whereas more numerous such words can be found easily from a dictionary in German and Russian or Teutonic and Slav groups of languages. The Spanish, Italian and Japanese languages do not fortunately suffer from this remarkable absence of vowelia interposes between consonants and hence these languages are not only much easier to pronounce but are also easier and more sonorous or euphonious to learn and listen to. We will have to bear in mind these characteristics of a larger proportion of interspersed vowels in vocables, shorter words or a preference for words of fewer syllables, and euphony or sonorousness of expression, while selecting or formulating the vocabulary for our world language.

III

Learned Savants and Committees of Linguists have come to a similar conclusion about having an A PRIORI *(completely new or invented) or an* A POSTERIORI *(adapted or constructed from an existing one) language as a World Auxiliary.*

While we have arrived at the conclusion that no existing language can serve the purpose of a world language by adducing various reasons as above, various linguists and savants have also come to a similar conclusion on other grounds and we shall do well to quote a few of them before we pass on to the consideration of the feasibility or otherwise of adopting one of the four constructed languages we have referred to as an international auxiliary language. C.E.M. Joad, the famous English Philosopher, writing on an International Language in his ' Opinions ' says, " There are roughly 2000,000,000 people in the world of whom 43,000,000 are English, 125,000,000, American, and about 20,000,000 citizens of the British Dominions. Add another 20,000,000 who are inhabitants of the colonies and English-speaking foreigners, and we get a figure of something over 200,000,000, about a tenth of the world's population. But there are 420,000,000 Chinese.

" It does not seem to me, therefore, that the claim of Basic English on the score of universality is very strong. For all these reasons, I am in favour of the adoption of an artificial international language."

Miss E. Sylvia Pankhurst writing in ' Delphos—The Future of International Language ' says, " like the Committee of the British Association, like Max Müller, we are of opinion that no national language, whether living or dead, can serve as the world auxiliary.

" English is the most modern of the great languages, the most widely spoken, and the most international; for it contains more foreign words than any other. Yet because of its frequent lack of agreement between spelling and pronunciation, its great variety of vowel sounds, the idiomatic character it shares with all natural tongues, and above all its

lack of political neutrality, English would not be acceptable to all nations". (p. 44).

Dr. Otto, Jespersen, a great linguist and philologist, writing in his 'An International Language' (Novial), about adopting an existing language as a world auxiliary, says, "The answer is that a deliberate choice of any one language for such a purpose would meet with unsurmountable difficulties on account of international jealousies. .....Nor would it be possible to make all nations agree on the selection of the language of a smaller nation; visionaries have, as a matter of fact, proposed Norwegian and Armenian! It would require a good deal of compulsion to make people all over the world take up the study of either of these languages, and to the nation thus put in the linguistically most-favoured position, it would be a doubtful boon to see its beloved tongue mutilated and trampled under foot everywhere, as would inevitably be the result." (pp. 17-18).

Prof. Lancelot Hogben writing in 'Interglossa', the name given by him to his proposal for a constructed language, says "There is much force in the contention that adoption of a natural language as an auxiliary would give those who habitually use it as a mother-tongue a position of undue cultural privilege, that this in its turn would breed resentment against them as a linguistic *Herrenvolk,* and that such resentment would eventually defeat the end in view. *A satisfactory auxiliary must be everybody's language because it is also nobody's language".* (p. 9).

Discussing the need of an Interlanguage in a gradually contracting world in need of constant international co-operation, Dr. Frederick Bodmer and Prof. Lanclot Hogben observe, "Socialist planning, that is planning for the common needs of peoples belonging to different nations or cultural units, will bring about incessant contact between medical officers of health, town-planning experts, electrical engineers, social statisticians, trade-union representatives. Increased leisure combined with improved travelling facilities will give to a large floating population opportunities to establish new social contacts through the medium of an Interlanguage; and its adoption would find a ready ally in the Radio. Even those who stay at home perpetually, would be tempted to avail themselves of opportunities to learn more of large-scale social enterprise in neighbouring communities of the supra-national State.

"The choice for those of us who cherish this hope lies between a constructed language and an already established medium, either in its existing shape or in some simplified form, such as Basic English. The second involves nothing more than agreement between educational authorities expressing the will of the people. On account of its grammatical simplicity, its hybrid vocabulary, its vast literature, and, above all, its wide distribution over the planet, the claims of Anglo-American would undoubtedly exclude those of any other current language which could conceivably have a large body of promoters in the near future; but political objections to such a choice are formidable. It is most unlikely

that a socialist Continent would decide for Anglo-American as its inter-language if Britain remained hostile to the new world order. The chances might improve if a Britain free of its imperial incubus entered into close co-operation with its neighbours next door to build up a world without class, war and want. Even so there is much to say for the adoption of a neutral medium cleansed from the all too evident defects of existing natural languages". (The Loom of Language—A Guide to Foreign Languages for the Home Student—1945—p. 483).

IV

As already hinted in previous pages, we need to-day a world language of inter-communication very badly and urgently, for the following among other reasons:—

We badly need a world language for purposes of international co-operation and as a potent factor for world civilization.

1. Not a day passes now when we are not having one international gathering or another, where we feel the need of a universally understood medium of inter-communication. This need of international co-operation is growing tremendously fast in fields of science, medicine, health, in politics, in economic and social endeavour.

2. It has been the experience from the days of the League of Nations that the machinery of translation and interpretation has not worked smoothly, effectively or efficiently. It has been costly, dilatory, cumbrous, wasteful and sometimes destructive of the personal and human touch, friendship and understanding arising from direct contact, which can take place best only through a commonly understood medium of intercourse.

   The League of Nations used to spend £19,800 on a personnel only of 29 translators and interpreters, apart from stenographers and typists and the enormous amount of paper and stationery required by its Secretariat, not to speak of similar establishments on a smaller scale needed and maintained by the various participating countries. In spite of this expenditure the machinery was not found always effective and difficulties arose on translations and interpretations, which had to be done on the spot and on the spur of the moment.

3. Naturalness and spontaneity of expression are sacrificed in the artificial atmosphere of the international conferences, as each speaker or statesman feels that he is not being understood by all his hearers except for his gestures and gesticulations, tone and excitement. Speakers are afraid, shy or loathe to establish direct contacts in such important international representative gatherings, for fear of being misunderstood or apprehending a faut pas if they use a language which both the high contacting parties do

not understand thoroughly and well. The lack of a common medium of speech thus acts as an obstacle to developing even desired friendships or contacts.

4. The use of three or four recognised languages and the allowing of other principal ones in addresses causes cumbrousness and involves a tremendous loss of valuable time taken up in translating every speech in the three or four other principal recognised languages. In deference to important personages, the other delegates have to hear or bear them in their ununderstood dialect and wait for their understandable translation. Under such highly artificial conditions, instead of an easy and friendly feeling, nerves and tempers get frayed as it seems to have happened at the Paris Conference of the United Nations in case of the Australian Delegate, who must have been too tired and bored, waiting for days listening to unintelligible jargon in alien tongues and accent to cry out at the end in despair and disgust to some such effect as 'Quack, quack, quack for four days and we have not moved an inch further on the subject'. One can certainly sympathise with this feeling of members in international gatherings. Most cool-tempered delegates and dignified diplomats, trained in the art of dilatory masterly inactivity, might feel interested to hear foreign accent and tongue for a day or two, but even these may lose their patience and interest in the subject and perhaps feel the loss of time, if three-fourths of it is taken up in this time-wasting mechanism of translation and interpretation in understood or ununderstood languages.

5. All of us have felt all these difficulties whenever we have met peoples or friends whom we like to talk to but who do not speak a commonly understood language. In travel and at home this difficulty is experienced very bitterly not only by the common citizens but by salesmen, tradesmen and experts, who have to visit other countries or peoples speaking a different language from their own. Modern world and social life make such heavy demands on our time and leisure that it is not possible for any man of average busy occupation to spare time for the study even of two or three of the principal languages of the world like English, French, German and Russian, not to speak of Chinese, Hindustani, Spanish or Arabic, all of which may be needed in the course of his travel, life, diplomacy or negotiations and for developing international friendships if he is so inclined. Further, all these natural languages with their extensive vocabulary, intricate grammar, local idiom and peculiarities take years to learn and more to master. Few can afford this time.

For these and other reasons, the need of a commonly understood, easy and straightforward world lingua franca is intense and all responsible statesmen and citizens should give early and expeditious thought to

setting up the necessary international machinery to frame an acceptable constructed language for world use and international intercourse.

V

The case of constructed languages and why none has so far been adopted as a world auxiliary.

We have already hinted at the beginning of this paper that none of the 300 attempts at a world-language making since the seventeenth century has so far succeeded. We can only very briefly allude to some of the reasons for their failure, viz.:

(*a*) Almost all of them have been the product of single though devoted and interested minds, with the result that the experience of linguists, philologists, phoneticians and other similar students of semantics, language and grammar has not been pooled for a great common objective as it should be in such a venture affecting the peoples of the world as a whole. Individualist fancies and at times imperfections have entered largely into the selection of vocabulary and the formation of words.

(*b*) According to authorities like Dr. Otto Jespersen, Dr. Bodmer, Prof. Lancelot Hogben, Miss E. Sylvia Pankhurst, Prof. Giuseppe Peano and others, the constructed languages like Volapük, Esperanto, Occidental, Novial, Interlingua and Interglossa suffer from individual idiosyncracies of their respective inventors, there is not enough consistency in word-formation and sometimes even with regard to grammar, there are too many prefixes and suffixes in some, too much unnecessary grammar in others, the original words in the European languages are too much distorted or mutilated and sometimes hardly recognisable.

(*c*) The constructed languages are not so easy to learn for the masses, and all of them use a non-phonetic script with resulting difficulty in pronunciation in almost all cases as in the existing European languages.

(*d*) One more serious reason appears to me to be the fact that the same objections that European scholars have urged, and which we have hinted at earlier, against the feasibility or advisability of adopting an existing national language as a world language, are equally forcibly applicable to the adoption of any of the constructed languages in vogue, because all of them have been based on the Greeko-Latin, Romanic, and Teutonic stock of root-words, and have completely ignored the languages of the rest of the world comprising nearly two-thirds of its remaining population speaking non-European tongues. In fact the attempt of E. de Wahl at the formation of what he aptly called *Occidental*

was quite outspokenly to provide a common medium of intercourse for the countries of western or European linguistic block as against the *oriental* countries including the African continent. It may however be stated that such a division is arbitrary, for, many countries or peoples in the African and Asian Continents speak languages of what philologists have called Aryan or Indo-European stock, as against Finno-Ugrian and Uro-Altaic languages spoken by the others in Europe, Asia and Africa.

VI

The World Language Planning should now be taken up at the UNO or UNESCO level.

I am therefore of opinion that now that the need of an International auxiliary is felt very keenly for all international conferences, which are becoming more frequent day by day, for international commerce and contacts, for international travel and international relationships, which are all growing more and closer and are inevitable in our inter-connected or one world, we must bring up and discuss this question of a world language on a high international level at which savants, scholars and specialists, educational authorities and representatives of the Governments of all interested countries of the five continents and oceanic islands may be present, and arrive at certain general and broad directives, which may be passed on to an international committee of experts and ordinary but interested men and women, who can then apply themselves to the great task of planning an international auxiliary language acceptable to all the peoples of the world. If necessary, the work can be initiated by the United Nations Organisation through its organ UNESCO (United Nations Educational, Scientific and Cultural Organisation) and brought up ultimately before the General Assembly of the parent body for adoption.

A World Language will have a great civilizing and humanizing influence on mankind as a whole.

The need of an inter-language however is very urgent, for, such a language, besides being of practical utility in so far as it will do away with the very heavy and avoidable expenditure of a complicated machinery and personnel for translation and interpretation, will be a great binding force between the high ranking statesmen, diplomats, politicians and scientific and technical men of the world as well as the common masses of mankind. These will be brought closer together and will be able to understand one another better through a direct touch facilitated by a common tongue, which will, as it were, become their second language. Such a well planned, well constructed language can become not only a great civilising force for the whole of mankind, but it can pave the way also for greater clarity and precision of thought, brevity of expression and unheard of ease at language learning. It may render the inter-flow of the finer thought, culture and literature of the

poly-glot peoples of the world much easier at all levels, thus making for a general raising of the level of human intelligence, understanding and refinement.

VII

Salient Requirements of a Constructed World Language.

Having pointed out the difficulties and deficiencies of existing natural and constructed languages, let us now briefly allude to the salient requirements of a world language and to the part that the Inter-Asian Relations Conference can play in devising one by setting up a Committee to co-operate with bodies like the 'International Auxiliary Language Association' in America[1] and other similar bodies in Europe:—

1. The world language must be *simple* and *natural* in structure, syntax, grammar and vocabulary. It must be *easy to learn and understand,* not for the educated or cultured classes alone, but also for the simpler masses of mankind all the world over at various stages of intellectual and cultural development.
2. It must have the *minimum of grammar* and grammatical rules necessary for explicitness and the *maximum of consistency* in word formation and application of the minimum rules of grammar.
3. The word-structure must be more *vowelic* and less consonantal, the words must be sonorous or *euphonious* and preferably *shorter* rather than longer. Where two words with less and more syllables can do equally or have the same meaning, preference should be given to the words with fewer syllables.
4. In the word selection and word formation of the new world language, we must aim at *clarity and precision of meaning* by taking advantage of the *knowledge and progress of science,* and we must not once again fall a victim to constructing words to correspond to those existing in the natural or constructed languages. As far as possible we must avoid words with vague meanings and not permit single words in our new vocabulary to take on *numerous vague meanings* of existing synonymous words. We must avoid synonyms if two or more synonyms mean more or less the same thing or if it is difficult to distinguish between their various nuances of meanings or contents. In order to frame such a precise, pointed and clear vocabulary, we must take the *help and guidance of scientists and experts of various branches of knowledge* in our work of language formation.
5. With regard to the inclusion of some words which have now assumed *international currency* and great *historical significance,*

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[1] Besides the above, the following International Language bodies can also be consulted and invited to assist in the great international enterprise, viz.—

The Esperanto Association, England.

The Volapük Academy, Paris.

Academia pro Interlingua, Paris and Torino.

we must select them with the above criterion in view. Further, out of two words with the same meaning in one or more languages, we must give preference to a word which is *easier to pronounce* for large masses of mankind.

6. Our new language must have a *phonetic script,* so that we read what we write and write what we speak.

7. We must avoid those letters of the alphabet which are difficult to pronounce, e.g. Z (ts) in German, ц or щ (tcheh or sh-tchah) in Russian, nasal *em, ent, ain, aim, oin* and *ille*, in French, C (θ) and J (xota) in Spanish, *CH* in Scotch, *KH* in Arabic, etc. Yet in order that we may be able to transcribe, transliterate and pronounce with the help of our phonetic alphabet such words (particularly names of persons, places, etc.) in most foreign languages, we must provide appropriate characters for such letters and sounds, wherever we have to use them.

It will be rather elaborate and occupy valuable space to develop the above few principles of guidance in forming a world language. I shall therefore leave it to a separate paper or appendix to do so, but would like to allude here to the suggestion made to the effect that it is possible to evolve a vocabulary of sufficient size for our daily and technical needs from a universal alphabet of five vowels and eight or nine consonants, pronounceable without any special training of ear or tongue, and without involving the learners from any part of the world into the difficulties of the French nasal vowels, the English *th,* German and Scotch *ch* sounds and others of a like type. Such an alphabet besides being easily pronounceable, would provide 'between 1,500 and 2,000 roots of open syllables like those of Japanese, Bantu and Polynesian words. Supplemented with forty-five monosyllables and a number of trisyllables, this would supply enough variety for a maximum vocabulary of sufficient size'.[1]

Taking further advantage of a phonetic script, which will be learnt in about an hour or two, and of the experience of Basic English and dialects of the constructed languages in the economy of the minimum and precise word formation and rules of grammar, I believe it will be possible for any average learner with a little guidance from a trained language teacher to learn and speak the projected world language in about a hundred hours of study spread over from a month to six months according to the time or leisure that he can spare for such study.[2]

VIII

A proposal for the Inter-Asian Relations Conference.

If the delegates to the Inter-Asian Relations Conference are convinced of the necessity of the task to set about planning an international auxiliary

[1] Bodmer—Loom of Language—p. 507.

[2] Allowing for half an hour each day on 26 days of the month and 3 hours each on one Saturday and Sunday a month, and the learning of only 40 words an hour, the learner can master a language of 4,500 words with ease in six months and can easily carry on conversation on ordinary or technical topics.

language at the earliest possible moment and if they further feel that the Asian Countries and peoples should contribute their share and make their own suggestions in time towards the planning of a world auxiliary, they will do well to take this opportunity of appointing a representative Committee of about thirty savants, scholars and interested men of letters to go into the question, contact the representatives of the various bodies in Europe and America that have been studying the problem of devising a world language, discuss the same as it affects Asian, African and Oceanic countries and peoples and arrive at some tentative decisions and conclusions. This Committee should be asked to draw up a general outline of the requirements of a world language and the broad principles and considerations on which the world language should be based or built up. It should have power to consult various other experts and interested students or laymen as considered desirable, and should be asked to submit a preliminary report of its findings within six months.

This is essential because an inter-language would be equally necessary for holding conferences of the nationals of various Asian and African countries, as the latter are bound to do more and more in the very near future for politico-economic, scientific, educational and cultural purposes and problems, affecting the peoples of the two continents and oceanic islands. In these meetings and conferences, the representatives of various countries will have to use one or two languages most in vogue amongst their peoples. At present for the countries of Africa and Asia, such languages can only be three, viz. English, French and Dutch (including Afrikaans) and these are not so widely known, nor do they express the idiom of the mother tongues of these representatives or their peoples. Nor are we in a position to adopt Arabic, Hindustani, Chinese, Malay or Pidgin English as an inter-Asian medium of communication, as these would be more unworkable than English or French. We have therefore to fall back upon the formation of an *a Priori* constructed language somewhat on the lines suggested above; and even if for any reason the European and American peoples are not able to agree upon a common medium of intercommunication, the Asian and African countries will have soon to decide what sort of inter-language they would like to devise and bring into early use in their international gatherings and conferences.

SUMMARY.

Briefly to summarise the above, with international conferences on social, economic and political problems, scientific, cultural and educational subjects and public health questions growing apace, and looking to the tremendous but avoidable loss of time involved in interpretation and translation in various principal languages, as also the possibilities of misunderstanding and lack of personal touch inevitable upon the intervention of translators and interpreters, the need for a world auxiliary language is pressing and urgent.

2. The problem of a world language is not so difficult as people imagine if we set aside prejudices and preconceptions and adopt a rational

view in order to evolve a constructed world language, which may be studied and mastered within a short time not only by the international statesmen and scientific or other intellectual workers but by the common masses of mankind, simpler as well as more advanced.

3. The question naturally arises whether we should have an existing language as a world language, or we should adopt an already constructed language as a universal lingua franca. If the former, the claims of the following national languages come to the fore according to the extent of their spread, study by different peoples, or the total number of people speaking it, viz.:—

> English, French, Spanish, Russian, Chinese, Arabic and Hindustani, spoken by about 270, 68, 102, 170, 420, 40 and 260 million people respectively.

If it is, however, considered desirable to adopt a constructed language as an inter-language, the claims of Esperanto of Zamenhoff, Interlingua of Peano, Novial of Jespersen and Interglossa of Hogben come to view, though Esperanto is read and spoken by only a few hundred thousand persons in the world and the other three are hardly known outside a small circle of enthusiasts of a universal language.

4. For various reasons detailed in the Paper, such as irregularity of spelling, complexity and profusion of grammar, vagueness of expression, redundance of vocabulary, non-phonetic script or alphabet, etc., the claims of the seven existing evolved languages have to be set aside, whereas with the same criteria the abovenamed four constructed languages fare no better.

5. We have therefore to fall back upon the proposal of framing or constructing a new instrument for human collaboration on a global scale with the help of open-minded students of various national languages, of philology, linguistics and phonetics, who have studied the subject of language from the semantic or functional standpoint, and who are free from a blind attachment to the rules of grammar and the inviolable sanctity of an evolved existing language, with its maze of idioms, glossary, flexions, declensions, exceptions, etc.

6. Coming then to the essential requisites of a world language which a Committee of experts and interested laymen sitting together to construct one will have to bear in mind, we may say that

(*a*) The projected World Language should be easy to learn and easy to pronounce.

(*b*) It should have the minimum necessary grammar and the maximum of consistency in the application of the rules thereof.

(*c*) It should adopt from various highly evolved and simplified languages such as English, Chinese, Persian as also from constructed and rationalised languages such as Esperanto, Novial, Interlingua and Interglossa useful and effective devices of word-

building and simplification of grammar, syntax, word nuances, etc.

(*d*) It should insist upon word economy somewhat on the lines of Ogden's Basic English and should avoid synonyms, homophones and such other unnecessary floridity or superfluity of vocabulary.

(*e*) Its vocabulary must be precise and it should avoid ambiguity or vagueness as much as possible. It should make for precise thought and scientific categories. It may utilise as many internationally widely known words as possible with as little change in them as necessary.

(*f*) Its terminology should be analytical and isolating and not flexional or agglutinative.

(*g*) It should adopt a rational and easily pronounceable alphabet with the minimum number of vowels and consonants and its Script should be strictly phonetic. The Script and Alphabet should be easy to write and easy to print so as to avoid wastage.

(*h*) It should be so constructed of essential or basic words for various purposes and departments of life activities, processes and operations that even a busy man can learn it with ease in 3 to 6 months by devoting about half to one hour a day to its study.

7. The construction of such a language requires the co-operation of many minds and cannot be the work of a single individual, nor of the linguists of one country, experts of one language or philologists alone. Such a Committee of experts should however be small and manageable, say not more than 30, and it should have Collaborators and Assistants from the field of philology, linguistics, phonetics, etc., experts of various tongues and other technical men to help and guide them for particularistic terminology in various specialised sciences, arts and departments of knowledge, so that the word selection may be on more rationalised lines.

8. The work of such a Committee should be reviewed by a larger body of men once in 3 or 6 months so that fresh light may be thrown on the work of the expert Committee from time to time before its labours are finalised and placed for acceptance before the governments of the countries of the world, academic bodies and international organisations, through the help of the UNO and UNESCO.

9. The whole work need not take longer than two years and the Inter-Asian Relations Conference can render a great service to the planning and construction of a World Language by appointing a Committee of experts to meet and discuss the subject with the representatives of countries speaking English or Teutonic as well as Romance stock of languages in Europe and America, and some Bantu speaking representatives of Africa, through international bodies like the International Language Association of America (Columbia University—Chicago), the Esperanto Association (140 Holland Park Avenue, London, W. 11), the Volapük or Interlingua Academy (Paris), etc.

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ASIAN RELATIONS
CONFERENCE

March—April 1947

AESTHETIC TRADITIONS of the EAST

by

Trivikrama Narayanan

GROUP D: CULTURAL PROBLEMS
TOPIC VII: CULTURAL PROBLEMS

12

INDIAN COUNCIL OF WORLD AFFAIRS
NEW DELHI

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This paper has been submitted to the Asian Relations Conference by the author. The author alone is responsible for statements of fact or opinion in this paper.

THE AESTHETIC TRADITIONS OF THE EAST

AND

THEIR PRESENT USE

Historical Background

Europe was in contact with Asia even in pre-historic times. But only a century ago she assumed a patronising attitude towards Asia. She began to say that she had a great mission to lead the East forward. She thought that her industrial advancement and her scientific progress were her special qualifications. By strange circumstances, and stranger standards of behaviour the sovereignty of vast regions of the East passed to the hands of the Western peoples. Their interest in the culture of the East was at best archaeological. Decades of Western influence on Eastern life and thought have insidiously undermined the cultural foundations of Asian countries, particularly those in direct contact like India, Indo-China and Indonesia. The Eastern peoples have been awed by the West to such an extent that they are sincerely ashamed of their own heritage and have a wild cupidity for the curios of the West.

Need for Freedom and Patronage

Attention, is however, being drawn now and then to this state by thinking people—indigenous and foreign—who could not check the spread of unhealthy notions. The understanding of Asian art is still the monopoly of a few specialists. Russia was once in bondage and her art made poor progress. An art-critic who hazarded a prophecy said that the present century might end with Russia in the forefront of modern nations, adding that 'once free from the paralysing restrictions upon her intellectual development and mental and spiritual freedom, once political and civic freedom were the possession of every Russian, the natural advance in all directions would be amazing and perhaps nowhere more markedly than in art—that sure reflex of the inward life of the nation'. (William Sharp, *Progress of Art in the 19th Century*, p. 294.) The prophecy was fulfilled. History tells us that great periods produced great works of art and that the decay of art was a sign of the decay of the people. Art activity did not appear as a miracle. It was the result of conscious and intense activity—mental, physical and spiritual—and of the unflinching enthusiasm of the people in power. A great instance of art patronage in Periclean Athens is frequently quoted, where art was made so popular that it had a profound influence on the Greeks.

Western Art Vs. Eastern Art

Responsible art opinion in the West has already expressed itself strongly against the blind and slavish adoption in the East of things foreign The occasion for the opinion was the famous abuse of the figure of the *Dhyani Buddha* by one Sir George Birdwood. The letter of protest to the London *Times*, (1910), from a body of Western artists, critics and aesthetic experts contains the following significant passage : 'We hold that the existence of a distinct, a potent and a living tradition of art is a possession of priceless value to the Indian people, and one which they and all who admire and respect their achievements in this field ought to guard with the utmost reverence and love. We consider that it is only in organic development from the national art of the past that the path of true progress is to be found. The school of national art in that country which is still showing its vitality and its capacity for the interpretation of Indian life and thought will never fail to commend our admiration and sympathy so long as it remains true to itself. We trust that while not disdaining to accept whatever can be wholesomely assimilated from foreign sources it will jealously preserve the individual character which is an outgrowth of history and physical conditions of the country, as well as those ancient and profound religious conceptions which are the glory of India and of all the Eastern world'

The Problems

Eastern art has, therefore, to be essentially Eastern. This is a biological necessity and no chauvinism is involved here. That practical and outspoken modern seer, Bernard Shaw, says that art in all its branches is indispensable to man. The matter calls for deep thought. Talent should be encouraged. Perversities should be destroyed. What are the standards that should govern Eastern art in the future ? What are the things to be eschewed as unhealthy, exotic and moribund ? What are the points to be stressed in order to make our art a reflex of life and a part of it ? These are the problems to be solved. These relate not only to sculpture and painting but to the industrial arts and architecture also. A firm art-policy should be decided upon and a programme drafted and implemented to steady, pull up and sober our styles and practices.

Standardisation of Canons of Art

It is said that just as people are to-day interested in stocks and shares, bank balances and cricket scores, the Greeks were talking of abstract things like beauty in design, rhythm, balance, mass and proportion. Asian culture had long ago evolved and standardised its own philosophy of art, and a commonly understood conception of beauty in nature and art in their varied aspects. We still have in the East the six canons of painting laid down by the sixth century artist-critic

of China: Hsieh Hoh namely, Rhythmic Vitality, Anatomical structure, Reality, Colour Distribution, Grouping and Classical Tradition;* the *Shadanga* or six limbs of Indian painting, namely *Rupabheda* (knowledge of shape), *Pramana* (proportion), *Bhava* (feeling), *Lavanya Yojana* (infusion of grace), *Sadrisa* (reality), and *Varnikabheda* (colour distinction); and a well-classified and unparalleled set of rules for the expression of emotions, the *Rasas—Sringara* (erotic), *Hasya* (comic), *Karuna* (pathetic), *Vira* (heroic), *Raudra* (furious), *Bhayanaka* (fearful), *Bhibatsa* (loathsome), *Adbhuta* (wonderful), and *Shanta* (peaceful)—of rhythmic postures and attitudes (*Asana*), and of hand gestures (*Mudra*). Though originally intended for the service of hieratic art the essential features of these prescriptions form the fundamental basis of all art and it is really hard to replace them. These old ideas and ideals have to be examined in detail and adapted afresh in order to apply them to present conditions. This work as well as a deep consideration of questions like (a) the way in which we can revive the naive love of life and brotherly feeling for all living beings, animal or human, that characterise our best art (Sanchi, for instance), (b) the desirability or undesirability of adhering to (i) the peculiar oriental perspective called vertical projection (showing the scene, as seen from a height) and (ii) the Eastern treatment of the nude for symbolic and narrative purposes and not for its own sake as in Western art, have to be taken in hand by a body of experts. The sooner the task is done the better. In India our revered and beloved pioneer art-masters and scholars are already old, notwithstanding the enthusiasm that fills all of them—Abanindro Nath Tagore, Nandalal Bose, A. K. Coomaraswamy, O. C. Gangoly, Stella Kramrish, J. H. Cousins and N. C. Mehta to name the foremost. It would, indeed, be a tragedy if we did not avail ourselves of the benefit of the ripe wisdom of these great chams of Asian art.

The East and Modern Movements in Western Art

One is deeply pained to notice a tendency in the East to copy the wild trends in modern Western art. With due respect to the spirit of enquiry which inspire these movements, it has to be admitted that they do not know their ground and they profess to search for light by proceeding in the wrong direction. There is a fundamental difference in the aims and functions of art between the old East and the new West. Whereas art was for the many in the East, the West takes for granted today that art is only for the few and is a personal experience of the votary. The story of Western art philosophy and practice from the last century consists of a disturbing series of reactions and revolts against the existing order—the Pre-Raphaelites against the historical painters, the Impressionists against the Pre-Raphaelites, and the various schools of today against the Impressionists—each sweeping clean the good as well as the bad features of the

* Laurence Binyon, *Flight of the Dragon*, p. 12

existing schools. The West had and has still no settled aesthetic ideals. It believed for centuries that a work of art should be as realistic as possible. When photography came it encouraged the pursuit of the old naturalism for a time. But some began to ask: 'Where are we? Should we merely produce dull appearances by recording shadows in colour? Should we not try to communicate something better, higher than this, the message of inner perception?' Such questioning and doubts gave birth to swarms of warring castes and sects that have made the arena of Western art a veritable pandemonium, a babel of tongues, all crying for inner meanings and esoteric symbolism. Around a host of isms beginning with Impressionism and ending with the supreme anti-climax of artistic expresson in Cubism and Surrealism (Cezannism, Naivism, Neo-impressionism or Pointilism, Synthetism, Post-impressionism or Fauvism, Abstractionism or Constructivism, Expressionism and Futurism) a whole library of eulogistic as well as libellous literature has gathered and confused the common man in the West. These developments have only one lesson for the East, namely, that it has little to learn from them. It would be a pity if the East should seek either to adopt completely the naturalistic technique or to imbibe the spirit of the confounded and degenerate attempts of the West to free Western art from realism. An eminent archaeologist (John Marshall) complained that in Mauryan art the 'memory picture' had not given place to direct observation of nature. This is really a complaint against the essential foundation of Indian art or of any true art. Only a few decades ago the West discovered the secret of art. The powerful French master De Lacroix told the Western world: 'The artist's object is not to reproduce exactly, for he would at once be stopped by the impossibility of doing so. It is the spirit of the subject that he tries to realise'. Ruskin once wrote* that he had no fear of being able to prove that a curve of any kind is more beautiful than a straight line. But the Cubist asserts to day that a straight line is stronger than a curved line and that strength is beauty. And he has produced the charming picture of a heaps of bricks to bring home the beauty of a young woman. To shock the beholder and make him think is the aim of Cubism and Surrealism nurtured by the art of cartoon and caricature and uncurbed by pragmatic tradition, the Surrealist avowedly looks for the more real behind the apparently real world, and deliberately presents visions akin to that of the somnambulist, the insane, the primitive and the child. The result is that the publie is frightened by nightmarish and ghoulish shapes 'Art is, after all, for the few. The surrealists' object is only to upset them by a world of dreams, myth, metaphor and subconscious thought. We cannot say that our art is downgrade. Our isms are merely passing phases, till they are admitted to the region of the visual arts.'† Such is the complacency of even sober criticism in the West.

*Modern Painters.

† Jan Gordan, *Studio*, No. 127.

We in the East cannot certainly afford to waste time and talent on these phases of Western Art. The writer of this paper was acutely distressed last month to observe that in an exhibition a Surrealist piece by an indigenous artist was adjudged to be the best performance by no less a person than a talented master of Neo-Indian art. A reference should, in this connection, be made to the sad complaint of the respected leader of the New Indian School, Abanindro Nath Tagore,* that his so-called disciples have not been able to uphold the fundamental qualities of great tradition of Indian painting.† His reporter adds: "A majority of our trained students of art, particularly of the so-called oriental brand with no aptitude for realistic portraits or for creative designs for applied art are vegetating on weak, sentimental, mythical and 'subjective' themes for which they have no real feeling or capacity, and have not received the severe discipline, education and guidance from the traditional masterpieces. They are repeating *ad nauseam* and indiscriminately, the conventions, manners and mannerisms of some successful pictures in weak, anaemic imitations and impossible and fantastic 'creations' and in diluted versions, old traditional types, which have been worn out, and from which all the vital flavour has evaporated". A bad pass, indeed, and needless to say that the situation should be saved with the least delay

Unity of Asian Art

Notwithstanding the diversity of Asian peoples there has from early times been an underlying unity in the art of the continent that has the unique honour of giving to the world all its great faiths. Geography and history enabled India to play a remarkable role in the advancement of culture. In the vast and far-flung regions of the continent, Indians were not strangers at any time A son of the large-hearted Asoka carried the banner of a new faith to a Khotan and the Tarim Basin, still full of remains of Buddhist shrines and monasteries. A great cultural synthesis took place in the lush woodlands of South-East Asia and the Malay archipelago which produced stupendous results of an absolutely unique character. Witness to-day in the sylvan wilderness of Indo-China and the volcanic rocks of Java those mammoth works of human mind and muscle—Angkor and Borobunder with a record length of stone-sculpture the like of which is not found in the mother country itself, or for that matter, anywhere else in the world. While the stories illustrated are Indian the figures of men and women sculptured are unmistakenly of the local ethnic types and they are among the most inspired, sustained and graphic representations of the world's art. The powerful mystic poetry of the Tang

Modern Review, February 1942, p. 179

period in China (which was the outcome of the influence of Taoism and Buddhism) inspired the art-ideal of the painters of the Sung School who sought to catch the spirit of things behind the concrete shapes. In the delicate and dim appearances of their landscapes these masters of the brush show the brooding cosmic mystery and immensity. Even in translations the compositions of the host of Tang poets conjure up vivid images of haunting scenes. The same spirit pervades their portraiture too. After the Sung period, decline came as elsewhere and Eastern art is waiting for the rise of a new Asia. Superseding the older creeds of Mazdaism, Judaism and Christianity, Islam ushered in a new era of a strong and civilising influence not only in Western Asia but in the farthest limits of the Mediterranean regions. Iran became the scene of a happy fusion of Arabo-Persian with Turko-Chinese elements—a fusion that has left an abiding record in the far-famed mystic literature and the worthy art of Islamic Persia. Its cosmopolitanism can be seen from an example. 'Many subjects in the Iranian manuscript such as the Bodhi-tree and the mountains of India and their inhabitants are already treated entirely in the Chinese manner; on other pages there is a scene from the court of 'Ala-ud-Din, Sultan of Delhi. In the same manuscript we have a battle scene from the Mahabharata which is obviously wholly Sino-Mongolian in character'. ‡ Perhaps it shows the scene of the teaching of the Gita, the mysticism of which should have interested the Persian thinkers. It was in India that the beauty of line and the charm of colour of Persian painting was destined to combine with the Indian capacity to give animation and expression to features. The Ajantan art that went out of India with Buddhism may thus be said to have come back to India like a boomerang through China and Persia In architecture the luxurious ornamentation and geometric decoration of Iran similarly combined with the engineering perfection and constructional beauty of India and begot some of the greatest achievements of human building, the supreme jewel of of which is that poetic dream in marble, the *Taj*.

Lines of Development in Painting and Sculpture

The general lines on which the development of Asian art so far as the beautification of the home and of the non-religious institutions are concerned should proceed may now be briefly outlined. A knowledge of the history and philosophy of both Western and Eastern Art is a prerequisite for the artist, the critic and the layman. We would be vandals if we shut our eyes to the great contribution of the giant thinkers, Plato and Aristotle, to Aesthetic Science.

It is not desirable to discard altogether the realistic and impressionist

‡ Rene Grousset, *Life of Moses*, University Library

art of the West. There will be no harm, and indeed, there will be definite advantages if our artists are acquainted with it. No one—not even the Royal Academician—dares to criticise the surrealist Pablo Picasso for he can beat any master of realistic art, past or present. We learn that, much to the embarassment and surprise of Sir Thomas Roe, the great Mogul connoisseur Jahangir proved that his Hindu-Muslim School could beat their European contemporaries in their realistic game. Oil and pastel seem unsuited to the East for climatic, artistic and economic reasons. It is rather difficult to depend upon them for subtle effects. Water colour and fresco for which the Orient is famous should continue to be her *forte* Finish, or rather the lack of it, should receive attention and should not be made a fetish of, to the detriment of quality and taste. Land and Seascapes are neglected in some parts of Asia and this want must be remedied. Recent methods of art encouragement and patronage in the West may be studied with benefit and adopted. For five years before 1939 the Federal Art Project of America employed about 5,000 artists at an expense of 100 million dollars and distributed the output of 100,000 works to schools, hospitals and public institutions. In addition to this, unselfish enthusiasts organised art centres and galleries, (stationary and touring), throughout the states and succeded in making the man in the street more art-minded. In Russia anybody interested in drawing is at liberty to undergo art training at state expense and become a practising artist. Art appreciation should be given a place in education. It can be introduced in the primary stage itself. Infant psychology is extremely susceptible to impressions. A child's capacity for love and imitation of beautiful shape and colour is inborn. Every school should have a collection of cheap colour prints of good pictures, (similar to the Reeve-Fowkes collection illustrating the history of European Painting), and of faithful models of sculptural masterpieces. There shonld not be much teaching but much seeing. There should, of course, be an efficient arrangement for training art teachers. The craze in schools for the 'stump drawings' in which the highlights, half-tones and cast-shadows of a photograph are counterfeited by rubbing lead-powder are horrors which cannot be too strongly condemned.

The peculiarity with the plastic art, whether it be in the round or in *bas-relief*, (as in plaques, medallions and wall sculptures), is that its appeal is easier and more direct than painting.

The general principles of creative expression referred to already apply to sculpture also. As aesthetic adjuncts of gardens, squares and edifices, sculpture plays a great part though it has not so many votaries as painting. In view of its social and psychological importance, it must have a great future in the new East. The necessity for its being in harmony with environment should

be borne in mind. In sculpture also we should guard against the bizarre trends of the West.

Architecture

The architectural genius of the East should be harnessed to the service of a hitherto neglected need, the need of the ordinary man. The provision for him of a healthy and happy home and not a mere shelter is a principal post-war problem. Stately edifices and well-paved roads go ill with squalid, smoky and crowded hovels for the worker on whom the material and moral prosperity of the country depends. Cheap reputation as the 'City Beautiful' is being hitherto claimed by pointing to the semi-European mansions and promenades. A new style of domestic architecture satisfying utilitarian and aesthetic requirements should be brought into being. In all the types of world's architecture, whether Egyptian, Greek, Roman, Saracenic, Gothic, Romanesque or Eastern, fitness to purpose and harmony with environment were the governing principles. It should be carefully borne in mind that the skyscraping steel and reinforced concrete of today do not mark a stage in architectural development, but are the result of two helpless features of the West, namely the saturated concentration of crowd and the total depletion of traditional building material. Behind the antiquarian jargon of names and categories lies the meaning of the building art. It is not a matter of big and imposing craftsmanship but rather of the ideas and ideals of life, from the amazingly simple yet enigmatic circles of Stonehenge full of haunting sacredness and the humble rustic cottage, bespeaking an existence as natural and unaffected as the hill and dale, the brook and tree amid which it seems to have risen out of its own accord, to the baths and lordly courts of imperial villas announcing the pomp and puissance of departed prowess, and the lofty tower of the temple the heaven-pointing minaret and the pealing belfry—all signifying a species of spiritual aspiration. These are the things of the past and of less advanced ages. About the present a recent thinker, Sigfried Giedion, says : 'From the advent of the industrial age a new and deadly influence was at work; the pursuit of wealth, through the new increase in power of production, became an end in itself. This led to the appearance of slums, and on the other hand to the building of large and formless mansions. Leisure vanished, no one had the time to live gracefully; life lost its equilibrium. Factual knowledge has not been re-absorbed and humanised by an equivalent feeling. All talk about organising and planning is in vain when it is not possible to create again the whole man, unfranchised in his methods of thinking and feeling'. This is the mess in the West and to a large extent in the 'advanced' regions in the East. There must be a merciless spring-cleaning of the village, town and the city and a re-building on sound lines calculated to promote the physical welfare of the community.

The Industrial Arts

Time was when it was accepted that only the Greeks had an inborn love of beauty even in humble household utensils and furniture and that they touched nothing which they did not adorn. Some felt that they probably learned what was good among other peoples including the orientals whose craftsmanship was, however, relegated to the anthropologist. The East did not draw a line between fine art and the art that was not fine. The worker in horn or ivory, metal or earthenware, textile or basketry had the same devotion and the same aesthetic ideals as the painter, the wood-carver, the sculptor and the architect. It is the works of the minor arts that have auffered most in recent times and effacement has been so complete in several cases that redemption is practically desperate. The supreme contempt of the intelligentsia for indigenous things, their love of foreign models, absence of demand of the old articles and the growing poverty have all been responsible for this state of affairs. Hermann Goetz (*Modern Review* May '41 p. 586) poignantly notes that the new ideas adopted from European models are the very refuse of Western manufacture—'designs such as the scum of Western life, sailors on tramp ships, prostitutes and criminals like to have tattooed on their bodies.' The old everyday wares of a thousand comely shapes, and ways of ornamentation have now been replaced by discarded cigarette tins, rusty empties of canned foods or new cylindrical and oblong abominations of indigenous metallurgy. A whole generation's work appears to be necessary for tolerable rectification of matters in this field.

Aesthetic role of the Science of Archaeology and Museology

For the present state of our knowledge of art and the preservation of art-heritage we are indebted to two agencies in particular namely, archaeology and museology (science of museums). These have been recently developed on scientific lines. Archaeology unearths or acquires works of art, reads them and collects the facts connected therewith. By processes of comparisons with cognate types and correlation it determines the cultural content of the finds. They are then handed over for custody and shown to the community in a proper manner. It is desirable to send young men from the East for training abroad and utilise their services for the cause of aesthetics.

ASIAN RELATIONS

CONFERENCE

March—April 1947

PROGRESS OF AGRICULTURAL SCIENCE IN INDIA

by

J. N. Mukherjee

GROUP D: CULTURAL PROBLEMS

TOPIC VII: CULTURAL PROBLEMS

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INDIAN COUNCIL OF WORLD AFFAIRS

NEW DELHI

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THE PROGRESS OF AGRICULTURAL SCIENCE IN INDIA DURING THE PAST FORTY YEARS

I INTRODUCTION

Agriculture is India's basic industry and advances in the group of sciences which have a direct bearing on agricultural progress are, therefore, of unusual interest and importance. The scientific treatment of the problem of increased crop production may be said to have started in the early years of this century when the Imperial Agricultural Research Institute was established at Pusa (transferred to New Delhi in 1936 and now known as the Indian Agricultural Research Institute) and the Provincial Departments of Agriculture came into being. Fortunately researches were not confined to workers in Government agricultural departments but were also carried out by scientific workers in the Indian States and in the Universities. An excellent account (which has been freely used in preparing this summary) of the achievements in the agricultural sciences during the twentyfive years ending in 1937 was given by Dr. W. Burns. The present resume attempts, however imperfectly, to depict an up-to-date picture, in view of the limitation of space and the exceedingly short notice at which this has been prepared, it does not pretend to be complete or exhaustive and all that it endeavours is to indicate trends and to call attention to some of the outstanding landmarks.

It is necessary here to point out that while considerable advances in our knowledge have accrued as the result of investigations into agricultural problems, the influence of these on the life and work of the farmer living in the village has been negligible and the ways and means of 'bridging the gap' between agricultural research and agricultural practice have been increasingly discussed and debated in recent years. It is beginning to be appreciated more and more that attempts to apply scientific methods to agriculture piece-meal or as the result of sporadic personal efforts cannot effect a deep or lasting improvement: the latter can only be achieved by means of planned, co-ordinated schemes in which all aspects of rural development are considered and in which the participation of the peasant farmer is made an essential feature. A great gap in the present organisation of the agricultural departments has been the lack of something corresponding to the County Agent or Agricultural Representative in the United Kingdom and the USA to act as a direct and active link between the research station and the farmer. There are now indications (the splendid special number of *Indian Farming* entitled *Developing Village India* is one of them) that the subject is beginning to be viewed in its proper perspective.

A perennial topic in discussions on agricultural amelioration is the question of consolidation of holdings with a view to introducing mechanised farming. 'Fascinated by the analogy of industry and misled by the example of prairie farming in North America, the ordinary person tends to assume that the bigger the farm the better the farming—at all times and in all places.' This, of course, is not true and the optimum size of a farm is dependant on climatic and economic

factors. Large size machinery suitable for comparatively thinly-populated steppes or prairies may not be useful under conditions of dense population and small farms, and there is the attractive possibility of agricultural engineers devising smaller 'editions' of agricultural machines to suit such conditions.

A landmark in the organisation of agricultural development of this country was the establishment of the Imperial Council of Agricultural Research in 1929 as a result of the recommendations of the Royal Commission on Agriculture. This Council which is assisted by Committees of experts on various subjects is charged with the function of stimulating and co-ordinating agricultural research and development. A feature in recent years has been the formation of Crop Commodity Committees (usually financed by means of a cess levied on the particular commodity) for the purpose of intensifying research and development work on the major crops. The first to be formed was the Indian Central Cotton Committee founded in 1921. Since then similar organisations have been formed for jute, coffee, coconut, oil-seeds, tobacco and rice; plans for centralised potato research are in active preparation.

In the preparation of this survey I have drawn freely upon material kindly supplied by my colleagues, Mr. C. H. Parr, Mr. J. F. Dastur, Major T. D. Brown, Dr. T. Ahmad and Dr. R. H. Siddiqui and I am indebted to them for their considerable share in this undertaking.

II BOTANY

Plant Breeding

Of the known scientific methods of increasing crop production, plant breeding is probably the most successful and the least expensive from the point of view of the grower. Plant breeding in the early years of this century in India aimed mainly at the production of better varieties of crop plants giving greater yields per unit area, thus increasing the returns to the grower. Although no technique was known to breed specifically for high yield, which is a complicated problem, it was possible to increase yields by 10 to 15 per cent over the average yields of the original varieties by applying individual plant selection to naturally-varying populations. Whenever it was found that the character combinations in the natural populations were inadequate, new recombinations were obtained by inter-varietal hybridisation. By the use of this method, apart from better yield, a number of varieties resistant to diseases and pests were also obtained. Thus, during the forty years of plant breeding carried out at the central and provincial departments of agriculture, many superior varieties suited to the different tracts, with their own characteristic type of soil and climatic conditions, have been evolved from time to time in the major crops such as wheat, rice, cotton, sugarcane, etc., and have been released for cultivation. The famous Pusa, Punjab and Bombay wheats which have made a name for high yield, quality and resistance to diseases like the rusts and the smuts, the high yielding and wilt-resistant strains of cotton having superior staple and spinning properties and the outstandingly superior strains of paddy evolved in Bengal, Madras and Bombay have all been very popular (Burns,

1938, 1944; Richharia, 1945). Among the several crops in which better varieties have directly helped agricultural production in India, the success achieved in the case of sugarcane at Coimbatore is by far the most striking. From this station, there has issued a continuous stream of vigorous, high-yielding canes suited to almost every sugarcane tract and in a surprisingly short time nearly 80 per cent of the total sugarcane area in India has come under improved varieties which has helped her in building up a very favourable trade in that commodity.

The results with the other crops have, however, not been so spectacular for the reason that the improved strains did not spread to the whole area for which they were produced and hence could not keep pace with the area under those crops which was increasing under the stress of a terrific rate of increase in the population of the country. This has resulted in the decrease in average acre yields in spite of the availability of improved strains. The problem has necessitated an urgent drive towards an increased dissemination of improved seeds coupled with the combination of intensified cultural operations under which the maximum potential yields could be realised from sowing them.

The work on breeding superior crop varieties naturally involved a wide collection of initial breeding material by surveys within the country and introductions from abroad. The necessity was felt of not only systematically classifying them but also studying the range of genetic variability in them and drawing up schedules for their appropriate description and identification. Special sub-committees were appointed by the Imperial Council of Agricultural Research to deal with this question and their labours resulted in the preparation of schedules to standardise descriptions of crops like cotton, rice and wheat and have afforded an easy comparison of types emanating from different areas and breeders.

Despite the initial successes, it however soon became evident that in respect of many crops the possibilities of direct selection and recombination of the old sets of characters present in the existing varieties would soon be exhausted and a *cul de sac* would be reached with many problems still unsolved. Aside from providing more food, the breeder had the responsibility of raising the standards of quality of crops. It was realised that while many agronomically useful genes such as those associated with yield and quality are found in cultivated plants, those which constitute hardiness and resistance to diseases, pests and drought are usually met with in their wild relatives. It is only by the use of such wild plants that the breeder can expect to breed these desirable characters into his varieties and no amount of breeding with cultivated varieties would lead to the desired result. Hence the search for new genes began. As a result of collaborated plant survey, collections have been built up at the Imperial Agricultural Research Institute comprising all species of *Triticum* and many species of its related genera, *Agropyron* and *Aegilops*, many species of *Solanum*, *Nicotiana*, *Brassica*, *Linum*, *Sesamum*, etc., several of which have been crossed with the cultivated species with economic ends in view (Pal and Ramanujam, 1944). The work on the survey of diverse Indian forms of *Saccharum spontaneum*, a hardy wild relative of the sugarcane, has been initiated at Coimbatore with a view to breeding resistant canes. In the Punjab, wild species of cotton, like *Gossypium anomalum*, are being harnessed for the production of hardier economic strains of

cotton. In India, the work of plant survey, however, is still in its infancy and the vast plant wealth of this subcontinent is still an unknown treasure house to its breeders. The work of the survey is proposed to be vested in a bureau of plant introduction; a beginning has been made in this direction by the recent establishment of a nucleus organisation to initiate work on these lines.

The breeding of improved varieties involves selection for many characters. While some of these are easily evaluated by visual judgment, others require special tests for classifying them for purposes of controlled selection. The most important character for selection is yield and it is recognised that it is a complex character being governed by a number of genes each with its additive effect and subject to considerable modification by environment. Study is being made of the inheritance of quantitative characters such as yield, and efficient methods of selection for these characters are also being worked out by application of statistics to aid plant breeding procedure. Interesting work in this connection has been in progress at the Institute of Plant Industry, Indore. Hutchinson and his co-workers have developed methods for evaluating the scope for selection in any initial unselected material and also for exploiting such material to the fullest advantage. These methods are based on the fact that genetic variability is the basis of improvement by selection and the maximum variability in respect of the characters for which selection is sought is likely to give the best response. Another significant fact which has emerged from these studies is that selection should be based on real genetic differences rather than on phenotypical values. Panse (1940) has shown that the genetic component of total variability in respect of the characters under selection in a population can be estimated by growing a set of progenies from single plant of that population and taking the regression of the progeny means on parental values. The replicated progeny row test has been adopted with success; this method is particularly valuable in detecting small amounts of genetic variance present in a material for purposes of secondary selection.

In this connection, reference must be made to the use of the 'discriminant function', which is the nature of an index for selecting complex characters like yield. This principle, originally proposed by Fisher, involves the use of the least variable component of yield as the basis of selection (Ramiah, 1941). At Indore, investigations on the value of this method in selecting for yield in cotton are in progress.

The study of varietal and hybrid mixtures is in progress at the Imperial Agricultural Research Institute and at Indore where the effect of natural selection among them is being evaluated. At Indore, the work on cotton on the performance of genetic mixtures has indicated their superiority over pure lines. For instance, it has been reported that the Upland variety suffers less and less from red leaf and leaf roll with increasing association with the *desi* strains and also that the close association with the Upland gives the *desi* strains a measure of protection against wilt; similar beneficial effects in respect of yield have also been observed.

Genetics and Cytology

For the proper utilisation of the material in breeding to meet the various requirements, it became necessary to undertake fundamental researches in sciences

like genetics, cytology, physiology and biometry and apply the resulting knowledge to practical problems. Apart from the study of the inheritance of qualitative characters, researches on the genetic basis of self-sterility in the potato, Brassica and other crops, which have been conducted at the Imperial Agricultural Research Institute have thrown considerable light on the breeding of these crops. Variations have been induced artificially through agencies like the X-rays and chemicals. Some results have been reported from the use of X-rays in wheat in the United Provinces, in sugarcane in Mysore, in cotton in Lyallpur and rice in Madras. Two mutations affecting the flower character were isolated and studied in Brassica (Pal and Ramanujam, *loc. cit.*) which, when suitably bred into improved varieties would be useful in keeping down natural cross-pollination in these predominantly cross-pollinated species and thus save the strains from deterioration.

Experiments on hybrid vigour have been in progress at the Imperial Agricultural Research Institute on maize, brinjal, tomato and tobacco; the principal aim of these investigations is to throw more light on the causes of hybrid vigour and the possibilities of its commercial exploitation. A cross combination, 'Pusa Purple', produced in brinjal has given some degree of success; similar results have been indicated by experiments on cigarette tobacco. Schemes have been put into operation with a view to evolving high-yielding hybrid maize at the Imperial Agricultural Research Institute and in the Punjab.

Studies have been undertaken with a view to evaluating the usefulness of induced polyploidy as a method of plant breeding. The role of polyploidy in the evolution of important economic crops like wheat, cotton, tobacco, sugarcane, *Brassica* potato, etc., are being studied. The work on mustard done at the Imperial Agricultural Research Institute has clearly demonstrated the origin of our cultivated mustard, *Brassica* juncea, through interspecific hybridisation followed by polyplyody in the F_1 hybrid of the two basis species, *B. nigra* and *B. campestris*. Cytogenetical studies have also been in progress with a view to transferring the resistance to drought and disease of the wild *Sesamum* species, *S. prostratum*, to the cultivated til, *S. orientale*, through interspecific hybridisation followed by induced amphidiploidy and judicious breeding of the amphidiploid. Autopolyploids of cotton and *Phaseolus* in Bombay and rice in Bengal have also been produced. These autopolyploids with the doubled number of chromosomes are invariably vigorous, possess a sturdier and more robust growth habit and are being further studied with a view to evolving superior economic polyploid strains. The results so far obtained at the Imperial Agricultural Research Institute have shown that while no economic benefit is likely to accrue immediately from the autotetraploid forms of grams and chilli, definitely superior forms of mustards with increased vigour and bolder seeds are likely to be obtained.

Plant Physiology

Plant Physiology has been a strong subject at some Indian Universities, the investigations being conducted from the viewpoint of pure science. Recently the subject has been taken up in agricultural institutions also and a development which is of considerable significance to agriculture is the initiation of a series of

studies on subjects like vernalisation, photoperiodism and drought-resistance. Fundamental studies on vernalisation have been in progress at the Imperial Agricultural Research Institute, the Vivekananda Laboratory at Almora and at the Calcutta University and the Bose Institute at Calcutta. It has been definitely shown that the time of flowering in plants can be modified experimentally, the significance of which in the hybridisation of plants with widely divergent flowering periods is immense. The possibility of practical application of vernalisation to Indian agriculture still remains to be tested. It may, however, be stated that although it may not offer wide possibilities, it should be useful to meet certain specific conditions and demands in plant breeding. Work is being done at the Imperial Agricultural Research Institute to study the degree of varietal resistance in wheat to soil and atmospheric drought and suitable indices of drought resistance are being evolved. Methods of artificially inducing drought resistance are also being worked out and evaluated; the results so far obtained indicate that seeds of wheat pretreated by alternate soaking in water and drying would give appreciably higher yields and withstand drought conditions better than the untreated controls. Similar results have been reported on rice in Orissa. Interesting results were obtained by Dastur (1944) in experiments on the Punjab-American cottons on light sandy soils at Lyallpur. The interrelations of four factors, viz., sowing date, nitrogen, water supply and spacing were studied and the effectiveness of late sowing for controlling the *tirak* disease was shown.

While technological tests for quality in certain crops like cotton and sugarcane are comparatively easier, quality in many cases is not clearly defined and may be related to appearance, flavour, cooking quality or nutritive value. For proper evaluation of these characters, simple tests which can be applied on a large scale are necessary. Work on these lines is being done in the Punjab in the case of wheat.

III MYCOLOGY AND PLANT PATHOLOGY

In the early years of this century, effective Mycological investigations were more or less confined to the Imperial Agricultural Research Institute where Butler carried out notable work. His book, *Fungi and Disease in India*, is still a standard work on this subject. Later, however, many of the provinces provided themselves with their own Mycologists and some of the Universities also took up work in this field. In the last few years, particularly, considerable advancement has been made in the study of fungi and the plant diseases caused by them. Investigations of virus diseases have also been begun.

Diseases caused by Fungi

Cereals

The most serious diseases of wheat in India are those caused by the rusts, all three of which are present and important. Our knowledge of wheat rusts in India is chiefly due to work done by Mehta at Agra. He showed that at harvest time, in the plains, the intense summer heat kills the uredospores so that there is no local infection at the time the wheat crop is sown; however in the hills the conditions are different

and uredospores survive on self-sown plants and serve as a source of infection to the new crop. He, therefore, concluded that the crop in the plains can be infected only by the dissemination of rust spores, by wind, from the hills. He later confirmed this observation and reported that the species of *Berberis* and *Thalictrum* (the alternate hosts of *Puccinia graminis* and *P. tritici*, respectively, on wheat) occurring in our hills play little part in the annual incidence of these rusts. The direction along which the dissemination of the three rusts takes place was traced by him with the help of slides exposed in aeroscopes, in various parts of India. The number of physiologic races of the rusts is not large; six races have been found of black rust, six of brown rust and eight of yellow. Mehta holds the view that if, cultivation of wheat in these parts of the hills of India which serve as foci for the spread of these rusts to the plains be discontinued for a few years and all volunteer plants rigidly destroyed, this would considerably help in the eradication of the rusts from the plains. Breeding work with the object of evolving rust-resistant wheats for the hills is in progress at Simla under Pal. Similar work for the plains is in progress in Bombay, the Central Provinces, the Punjab and the Imperial Agricultural Research Institute.

The loose-smut disease of wheat perhaps ranks next to the rusts in its distribution and destructiveness. A simplified method of hot water treatment for the control of loose-smut for the hilly tracts of the Punjab and a solar energy methods for the hot parts of the plains, have been evolved at Lyallpur. At the Imperial Agricultural Research Institute a large number of varieties were tested for resistance of susceptibility to loose-smut, several wheats were found to be highly resistant or even immune, including the improved strain, I. P. 114. The same varieties were also tested against the flag-smut disease caused by *Urocystis tritici*. It is suspected that the Indian strain of the fungus is different from that occurring in Australia.

A new stinking bunt disease was reported by Mitra in 1935; this is caused by *Neovossia Indica* and is restricted to north-western India. Foot-rot, root-rot, black point and *Septoria* diseases of wheat have also been investigated by various workers.

The 'Ufra' disease of rice in Bengal was found by Butler to be due to *Tylenchus angustus*; it was prevalent more in areas where soil aeration was poor. Other rice diseases which have received attention from workers in Bengal, Madras and other areas are bunt (*T. horrida*), false smut (*Ustilaginoidea virens*), blast (*Piricularia oryzae*), foot-rot (*Fusarium sp.*); diseases caused by *Helminthosporium* and *Sclerotium oryzae* have also been investigated. In the Central Provinces it was shown that the 'pan-sukh' disease of rice was due to bad soil conditions and could be controlled by draining out water from the fields and re-flooding them after the soil had cracked; addition of ammonium sulphate helped in the recovery of the affected plants.

In the Bombay Presidency, Kulkarni made a critical study of smuts on *jowar* and recorded the following:—*Sphacelotheca Sorghi*, *S. cruchta*, *Tolyposporium filiform* and *Sorosporium reiliana*. The first two, he showed, could be controlled by treating the seed with copper sulphate solution. Later workers recommended the use of dust fungicides like copper carbonate and sulphur powder in preference to the wet treatment. Diseases on *Jowar* caused by *Sphacelia* and *Macrophomina* have also been reported

Easeoli

A concentrated formaldehyde method of treating oats seed against Smut disease (*Ustilago Kolleri*) was evolved at the Imperial Agricultural Research Institute. In Madras it was shown that *Ustilago Kileri* on *Setaria italica* was borne exclusively on the seed and could be controlled by treating the seed with fungicides.

Fibres

The disease or group of diseases of cotton known as root-rots have been under study in researches financed by the Indian Central Cotton Committee. In Gujerat, Likhites' results indicated that the affected cotton roots contain the organisms *Macrophomina phaseoli*, *Nemas* and some *Fusaria*. In the Punjab, on the other hand, Vasudeva's work indicated that the rot there is due to *Rhizoctoria bataticola* and *R. solani* acting together, their activity increasing in proportion to the amount of irrigation, while they are harmless to the cotton crop under rainfed conditions. It was later shown that low temperature and high humidity are unfavourable for the development of the disease and this indication has been successfully used in the control of the disease by mixed cropping and variation in sowing date.

The important wilt disease of cotton was investigated in the Bombay Presidency where it was concluded that the wilt was caused by *Fusarium vasinfectum*. Dastur working in the Central Provinces however came to the conclusion that the cause of wilt was not due to a pathogenic organism and suggested that it may be due to the presence of aluminium salts in the plant tissues. Uppal found that *F. vasinfectum* consists of a number of physiologic forms and that wilt disease is most severe at a soil temperature of 20° to 27°C, and that the infection is carried by the seed.

A cotton disease caused by Colletotrichum indicum has been studied in the Central Provinces. The value of disinfecting cotton seeds with fungicides has been demonstrated.

Oil seeds

As long ago as 1914 it was shown that the 'Tikka' disease of Groundnut in the Bombay Presidency was caused by *Septoglocum arachoidis* and that the disease could be eradicated by the introduction of exotic varieties. Later it was demonstrated that spraying was also successful in dealing with the disease.

A leaf spot disease of safflower caused by *Cercospora Carthemii*, and a wilt disease due to *Sclerotinia sclerotiarum* have been described; in linseed a new blight caused by *Alternaria linii* has been reported.

Sugarcane

The sugarcane red rot disease due to *Colletotrichum falcatum* received early attention at the hands of Butler. This work has been followed up by others and the nature of its transmission through diseased setts and its consequent control by rejecting these has become so established that it has now ceased to be a really threatening disease of sugarcane in India.

Potatoes

Fusarium diseases of potatoes received a great deal of attention in the Bombay Presidency, especially in relation to the problems of potato storage. Late Blight has been studied at the Simla Potato Breeding Station where it has been demonstrated that resistant or immune varieties exist which makes it possible to breed varieties possessing both economic qualities and resistance to Late Blight. A new tuber rot of potatoes in the Simla hills, caused by a new species of *Phytopthora* was reported in 1945.

Fruit Trees

Diseases of citrus have received attention in Bombay from Uppal and his colleagues. They have found that gummesis of citrus there is due to *Phytophthora palmivora ;* they also discovered a *Fusarium* apparently responsible for a dieback of the ' Mosambi ' orange. Disease of citrus were also studied in the Punjab by Chaudhuri ; these included wither-tip authracnose (caused by *Colletotrichum glocosporiodes*), chlorosis and diseases due to Saprophytic moulds. Bordeaux mixture with ferrous sulphate as sticker proved a useful treatment. In the Central Provinces the fruit disease of citrus was studied by Dastur.

The authracnose disease of mangoes has been studied in the Punjab and soft rot, sooty blotch, fly spech and stem-broun diseases of apples in the United Provinces. The powdery mildew of grapes was studied in Bombay and it was shown that dusting with sulphur was preferable to spraying with Bordeaux mixture (the control measure recommended earlier).

Work has also been done on the diseases of the banana and some other fruits but considerations of space do not permit reference to this.

Plantation and special crops

Our knowledge of coffee diseases is chiefly due to Mayone and other workers of Southern India. Work on tea diseases has been confined more or less to the Assam and Darjeeling hills where Tungstall has made a special study of the blister blight of tea (*Exobasidium vexans*).

The ' Koleroga ' disease of the betel-nut and several diseases of the coconut have been intensively studied in South India. Foot-rot diseases of ' pan ' have received special attention in the Central Provinces. It has not been possible to refer here to the large amount of taxonomic work that has been done ; the chief workers in this field have been Bose, Mundkur, Bagchee and Sultan Ahmad.

Diseases caused by bacteria

Plant diseases due to bacteria began to be investigated in 1909 at Pusa, including bacterial diseases of wheat, poppy and citrus. Later work included investigation of the bacterial ring disease of potatoes and bacterial red-stripe in sugarcane.

Diseases caused by viruses

Work on virus diseases of crop plants in India is of comparatively recent origin. The diseases investigated include the spike disease of sandal, mosaic disease of chillies, mosaic and leaf-curl diseases of tobacco, phyllody in sesamum, little leaf disease of brinjal, yellow vein mosaic of okra, mosaic disease of bottle gourd, big bud of tomato, marble disease of cardamum, mosaic disease of sugarcane, and several virus diseases of potatoes. Raychaudhuri has recently purified that virus of sunhemp and obtained the virus in crystalline form.

Diseases caused by phanerogams

Among phanerogamic parasites, attention has been specially paid to *Orobanche* on tobacco and *Striga* on sorghum; the problem of resistance is being studied in Madras and Poona respectively.

IV. ENTOMOLOGY

Ever since the establishment of the Indian Museum, Calcutta, in 1866, systematic work on Indian insects had been carried on by the entomologists attached to the museum. In 1888, the Government of India, realising the importance of the study of the insect pests of crops for the progress and well-being of an agricultural country like India arranged with the trustees of the Indian Museum for the identification and study of various insects pests occurring all over India. The progress in the study of Indian insects was slow but continuous in the first three-quarters of the nineteenth century and the decision of the trustees of the Indian Museum, Calcutta, in 1888 to take up investigations on insect pests of crops in addition to taxonomic work was a landmark in the story of the development of applied entomology in India. During the following twelve years, E. C. Coates, the Museum Entomologist, published a number of valuable papers on Insect pests of crops in five volumes of the *Indian Museum Notes*. In 1901, Lionel de Niceville was appointed Entomologist to the Government of India with headquarters at the Indian Museum, Calcutta. When the Imperial Agricultural Research Institute was established at Pusa in 1904, the designation of the post of the Entomologist to the Government of India was changed to Imperial Entomologist and Maxwell Lefroy was appointed as the first Imperial Entomologist. Lefroy did most of the early pioneering work and he published the results of his careful observations made in the field on the bionomics of a number of insect pests in a series of excellent papers and memoirs. In addition he published two books entitled *Indian Insect Pests* and *Indian Insect life* which today are valuable books of reference not only for students but teachers as well. Fletcher who was Entomologist to the Government of Madras succeeded Lefroy. He had, before coming to Pusa published an excellent book entitled *Some South Indian Insects*, which is also a standard work of reference.

Though the Government of India had shown the way by appointing its entomologist as early as 1901, the provinces and states were rather slow in appointing their specialists. The Government of Madras appointed their entomologist in 1912, Punjab in 1919 and United Provinces in 1922. In Bombay, the Professor of Entomology of the Poona College of Agriculture was also the Government

Entomologist. The Central Provinces appointed its first Government Entomologist in 1933 and Bihar in 1937, while Bengal appointed its Entomologist only in 1945. Most of the large and progressive states like Hyderabad, Mysore, Travancore, Cochin, Gwalior, Kashmir, etc., have their own entomologists.

In the Imperial Agricultural Research Institute besides the maintenance of a large and representative collection numbering over twenty-six-thousand species and the finest of its kind in the East, the biology of a very large number of insect pests of agricultural crops and stored products have been studied in great detail to find out the vulnerable stages in their life-histories with a view to plan and adopt effective control measures. Entomological work in the provinces or states has naturally centred round such insects as are of economic importance to the provinces or states concerned.

Locusts

The Desert Locust *Schistocerca gregaria* is a very serious pest that has periodically visited this country in the North, causing serious damage to agricultural crops. During the last four decades there have been three serious locust cycles, the first from 1912-1919, the second from 1926-1931 and the third which began in 1940 is still on. In addition there was a locust incursion in 1935 which did not develop into an invasion. The cycle of invasion of 1940 coincided with a critical phase in the second world war and but for the energetic and efficient control measures taken in time the food position of this country would have been far more precarious than what it is today.

Uvarov in 1921 made the important discovery known as the phase theory of locusts. According to this theory the desert locust can exist in two biological phases namely the solitary phase or *phasis solitaria* and the swarming phase or *phasis gregaria.* When conditions are favourable the locusts in the solitary phase multiply in millions to become the gregarious phase when they are destructive. In order to tackle this menace in a rational way, the Board of Agriculture at its fifteenth meeting held in December, 1929 made four important recommendations, viz., (1) the establishment of a locust intelligence bureau, (2) investigations on locust control measures, (3) a survey of the permanent breeding grounds in India, (4) investigations into the bionomics of the desert locust. In the eighteen years that have passed since then not only all these recommendations have been carried out but the locust section which was under the Imperial Council of Agricultural Research from 1930-1939 was taken over by the Government of India and put on a permanent basis from April 1939 under the designation 'Locust Warning' Organisation under the administrative control of the Imperial Entomologist.

The locust organization had worked for just over a year under the Imperial Entomologist when, in the Autumn of 1940, the pest assumed the gregarious phase. Thereafter the organization was expanded immediately to meet the new and menacing situation, to cope with increased work of conducting extensive survey in possible breeding centres, to carry out extensive anti-locust propaganda in States and provinces likely to be affected, and to give all possible technical assistance. In 1941,

the Government of India in consultation with the representatives of various States and provinces likely to be affected, sanctioned a scheme to coordinate locust control work with very much increased staff and put it directly under the Imperial Entomologist. This scheme aims at controlling the locust in the desert areas of Sind, Rajputana and Baluchistan. The States and provinces of these areas are responsible for the control operations and are advised by the officers of this scheme. The cost of control operations is borne by the funds of the scheme which is contributed by the adjoining beneficiary states and provinces.

The progress of locust breeding and control may briefly be reviewed. Small swarms of yellow locusts were observed in the Rajputana area from July to September 1940 which gave rise in October to pink-coloured swarms. These mainly migrated to the Baluchistan area and bred in the Spring of 1941 when extensive control measures were undertaken and incipient swarming prevented. But waves of exotic swarms invaded India from the west during June and July 1941, entering Sind and Rajputana, and laid eggs over large tracts and underwent two generations by the middle of November. The resulting swarms migrated to various parts of India and some even went to Persia. The majority of these swarms perished in India due to excessive cold early in 1942, and the light breeding that took place in Spring 1942 in Mekran was effectively controlled.

From about the middle of June 1942, however, infiltration of swarms from Persia was observed and these spread mainly in the Sind and Rajputana deserts, followed by other swarms in the following months. Eggs were laid on a large scale by these swarms in the desert tract and several swarms developed. The latter bred mainly in the Spring of 1943 in parts of Northern Punjab and Western Sind and the resultant swarms together with numerous immigrant swarms that came from May onwards, laid eggs after the monsoon rains in the Sind and Rajputana desert area. Owing to very efficient control measures undertaken, very few swarms were formed and these also fizzled out by the middle of November. From this time onward, till about the end of March 1944 India was free of locust swarms and it was hoped that the locust cycle has been brought to an end. Unexpectedly, however, swarms came in March-April from Arabia and spring breeding took place in parts of Baluchistan and in some places in Sind. More exotic swarms entered Sind and Rajputana in June and egg-laying took place over extensive areas in July. Owing to timely control measures, very few swarms emerged in September. These laid eggs and gave rise to second monsoon generation in October-November, but were successfully controlled. The locust situation remained calm from Novermber 1944 till the end of February 1945 and no swarm was reported. In March, 1945, however, exotic swarms once again entered Baluchistan.

Owing to the control measures adopted against the locust pest throughout this cycle, the greater part of the threatened cultivated tracts of India escaped damage. For the first time, efforts were made to control the pest in its permanent breeding grounds in India and they were very largely successful. But for the infiltration of the pest from countries on the western border the cycle would have been effectively brought to an end as early as 1943.

The Locust Warning Organisation which is now under the Director of Locust Control has its head quarters in New Delhi with a sub-station at Karachi and with out-posts in the deserts of Sind, Baluchistan and Rajputana.

In the Entomological laboratories of the Punjab Agricultural College, M. Afzal Hussain, the late Government Entomologist did valuable ecological work on the colour characteristics and variations in *phasis solitaria* and *phasis gregaria.*

In addition to the desert locusts that periodically invade this country, another species of locust called the Bombay Locust, *Patanga succinta*, made two serious invasions in 1881 to 1894 and 1902 to 1904. The Imperial Entomologist, in cooperation with the Bombay Government brought the 1902-1904 invasion under control. It was estimated that sixtysix million adults and four hundred million eggs were destroyed during this campaign. This locust has not made its appearance since then.

Cotton Pests

The more serious pests of cotton are the Spotted Bollworm, *Earias insulana* and *Earias fabia*, the Pink Bollworm, *Platyedra gossypiella* and the cotton whitefly, *Bemisia gossypiperda.* The cotton leaf roller, *Sylepta derogata* sometimes assumes the status of a major pest and the cotton stem-weevil, *Pempheres affinis* is a problem in the cotton growing areas of South India.

The earliest work on the Spotted Bollworm in India was carried out at Pusa to study its life-history, distribution and natural enemies. Trapping the moths in the Andres-Maire traps and medusa-lamp traps was tried. Experiments were performed to determine the effect of thick and thin sowings and the sowing of cotton with another crop, for example, tur, *Cajanus Cajan.* Several parasites of the pests were reared and a study was made of the habits and alternate hosts of *Microbracon lefroyi*, a parasite still considered to hold some promise for the control of bollworms. These early investigations carried out at Pusa have formed the basis of much of the present day work. In Surat, valuable work on this pest was done by Deshpande and Nadkarni and the results of their investigations have been published as monograph by the Imperial Council of Agricultural Research.

The United Provinces have done excellent work on the Pink Bollworm and the heat treatment for cotton seeds by the Department of Agriculture has been widely practised, not only in the United Provinces but wherever cotton is grown.

In the Punjab critical work on the cotton whitefly (*Bemisia gossypiperda*) has been carried out and the results show that it does serious damage to cotton from May to September. The pest then migrates to alternate food plants such as potatoes, turnips and cauliflower. Spraying with rosin compound which costs about Rs. 1-8-0 per acre has been found to be an effective means of control. Recent irrigation experiments carried out to study the relative incidence of the whitefly showed that generally speaking the attack is inversely proportional to the quantity of water supplied to the crop. Plants treated with nitrogenous manures showed comparatively lower infection.

It has been found in the Punjab, that a thorough clean up of the Malvaceous weeds and ration cotton during the off season is the most efficient means of the control of the cotton leaf-roller (*Sylepta derogata*).

The cotton stem weevil is a serious pest in the Madras and it has been studied in great detail both in the field and in the laboratory.

Sugarcane Pests

Ever since the Government of India granted protection to the Indian Sugar Industry in 1931, the acreage under sugarcane has steadily increased and the problem of control of the insect pests of sugarcane has assumed special significance. The most serious pest is the stem borer, *Argyria sticticraspis*. The pest causes a reduction in the tonnage to the cultivator and a reduction in sucrose to the mill owner. The other serious pest is the top-shoot borer, *Scirpophaga nivella*. This pest stunts the growth of the cane causing a heavy reduction in the tonnage. There is also a reduction in the recovery of Sucrose. The root borer, *Emmalocera depresella*, causes damage in the early stages of the plant growth. *Pyrilla* assumes the status of a major pest in certain years.

The Imperial Council of Agricultural Research was financing schemes for the control of these pests on an all India basis till 1944. Since then this programme of research is being financed by the Indian Central Sugarcane Committee. A coordinated programme of research work to control borers in the various areas of the country was planned from the centre in 1942 and the results of some items of research work were recommended for general adoption in the different provinces and states. The work is still in progress. The biological control of insect pests is one of the recent developments in applied entomology and special attention on the possibilities of controlling sugarcane pests by means of parasites is now being given. A co-ordinated programme for the biological control of sugarcane stem borers of the parasite *Trichogramma evenescens minutum* was planned from the centre for the various sugarcane growing tracts of India and the trend of the results obtained from the four centres, namely, Madras, Bombay, Bihar and Orissa have been encouraging. Besides the biology of a number of promising parasites and predators of potential importance have been studied at the centre.

In Mysore, it has been claimed that the control of the stem borer, *Argyria sticticraspis* by field liberations of *Trichogramma evenescens minutum* is effective.

Pests of Fruit Trees

Kashmir and the north-western Provinces are well-known for the excellence and variety of fruits that they grow. Also in the plains and the hills of the Northern India, the horticultural industry has made rapid strides in recent years and a variety of luscious fruits are grown that find a ready market in the towns that are nearby. In recent years three serious pests of fruit trees have gained entry into this country. These are the *San Jose Scale*, *Comstokaspis perniciosa*, the codling moth, *Lasperysia pomonella* and the notorious *Icerya purchasi*, popularly known as the cottony cushion scale. A scheme of survey, financed by the Imperial Council of Agricultural Research,

of all these pests with reference to their incidence and distribution and recommendations for effective control measures has been completed. The woolly aphis, *Eriosoma lanigerum*, is a fairly serious pest in the Punjab, United Provinces and Madras and the pest has been effectively controlled by extensive liberations of the parasites *Aphelinus mali*. The apple root-borer, *Lophosternus hugelei* has received the attention of the United Provinces Department of Agriculture and suitable cultural and other control measures have been divided to bring the pest under effective check.

Mango hoppers (*Idiocerys clypealis*) have been controlled in Bombay by blowing sulphur powder with dust guns.

In the United Provinces the control for the mango white bug (*Monophlebus stebengi*) has been found in a grease band which effectively prevents the newly hatched nymphs of the pest from climbing up the trees. The most effective recipe proved to be a combination of three parts of resin to two parts of castor oil.

Grass-hoppers

There are two important grass-hoppers occurring in this country and causing serious injury to the crops. These are (1) The Deccan Wingless Grasshopper, *Colemania Sphenarioides* and (2) The Rice Grasshopper, *Hievoglyphus banian*. The control measures that have been recommended and which have been found to be effective are (1) spraying of crude oil along the bunds in the initial stages (2) mixing crude oil with irrigation water and beating down the pests into it (3) hand collection of insects and dragging of iron sheets with molasses applied to them.

Insect Vectors of Virus Diseases

In the Imperial Agricultural Research Institute it was discovered that the vector responsible for the leaf-curl in tobacco was the whitefly *Bemisia tabaci*. Spraying with fish oil rosin soap controlled the whitefly to a great extent.

Insect Population Studies

Fundamental research work on insect population studies was taken up in the Agricultural Research Institute as a result of the recommendations of Sir John Russell who visited India in 1936. Original time temperature equations have been worked out. The results obtained by the studies on the relation between temperature and development of insects has led to the construction of two new instruments which have been named as ' Biograph ' and ' Biometer ' respectively.

Stored Grain Pests

The problem of the control of stored grain pests has been actively taken up by many provinces and states and experiments on the efficiency of many preservations like calcium carbonate, copper carbonate, sodium fluoride, sodium fluosilicate, etc., are in progress. Critical experiments are also under progress with the well-known insecticides D.D.T. and 666.

Insecticides

A variety of insecticides are being used in different parts of the country to control different kinds of insect pests. In recent years the insecticidal properties of a number of indigenous plants are being tried in different provinces and states in order to provide cheap and effective insecticides to the poor cultivators of our country side. In the Forest Research Institute, Dehra Dun, as also in the various Entomological Stations in India the toxic properties of the aqueous extracts of several species of indigenous plants such as *Tephrosia*, *Mundulea* and *Thevetia* are being tried. In the Imperial Agricultural Research Institute, the nicotine contents and insecticidal properties of forty varieties of tobacco are being tested.

V. *SOIL SCIENCE, AGRICULTURAL CHEMISTRY AND AGRONOMY*

Research in soil science and agricultural chemistry in India is of comparatively recent growth. It dates with the establishment of the Imperial Agricultural Research Institute at Pusa in 1905 and the appointment of the late Dr. J. Walter Leather as the Indian Agricultural Chemist. Besides initiation and development of soil work at Pusa, Leather trained the first batch of soil workers. Subsequently the provinces, States and Universities have taken up research in soils and agricultural chemistry. As would be expected, general soil studies and problems of soil fertility first engaged the attention of the early workers. The accumulated experience and knowledge had already revealed interesting problems for investigation. The developments in soil science outside India have had their influence on soil workers in India, with the result that in recent years the outlook and work in India have been similar to work elsewhere.

During this short period Indian workers have made valuable contributions towards soil physics, soil chemistry, soil colloids, soil fertility and soil microbiology and it becomes a difficult task to compress the wide and varied contributions in the several related fields of study and investigation, in assessing the progress.

Soil Colloids and Clay Minerals

Puri working at Pusa formulated the theory that the soil particles could be considered as a colloidal acid with replaceable surface active hydrogen atoms and that the important soil properties depend on the nature and degree of saturation of exchangeable ions. Bacterial activity and plant growth were also influenced by the degree of saturation of the soil colloids.

The unsatisfactory nature of the available information on the electrochemical behaviour of clays and clay minerals was early recognised and work of far-reaching theoretical importance and practical significance was started by J. N. Mukherjee in 1930. Systematic studies of the colloidal constituents and finer clay subfractions of Indian soils and natural deposits of clay minerals have been made and the results are reported in a series of papers emanating from the Physical Chemistry Laboratory of Calcutta University.

In the titration curves of hydrogen clays and acid colloid systems two types of cation effects regular and irregular or specific have been formulated. The different

types of cationic effects as also other features of the hydrogen clays which are difficult to understand from the classical electrochemical standpoint have been reconciled in the light of the theory of the electrical double layer and of absorption of ions as postulated by J. N. Mukherjee during 1920-21. These fundamental facts have been applied to explain the variations in base exchange capacity by different methods.

The more important differences in the electrochemical properties of hydrogen clays have been utilized in the identification of clay minerals by Mukherjee and his associates. A ratio of the base exchange capacity at the two inflexion points in the titration curve is nearly 2.0 with Kaolinitic minerals, montmorillonitic minerals have on the other hand one inflexion point. There is also evidence of the existence of other types of clay minerals in soils. Maximum viscosity of hydrogen clay at 75% neutralisation with NaoH occurred only with montmorillonite clays in contrast to kaolinitic clays. Repeated leaching of hydrogen montmorillonite with neutral salts showed an appreciable decomposition, confirmed by X-ray and base exchange properties and this is again in contrast to hydrogen kaolinitic under similar treatments.

Soil Chemistry (analytical)

The need for a standard method of soil analysis has been recognised by agricultural chemists and soil workers of India and from time to time the various methods have been modified or new methods to suit the Indian conditions have been suggested. Methods of mechanical analysis of soils have been critically investigated and Puri developed the Nacl-NacH method; Chakrabarty and Sen suggested the alkaline permanganate method.

Puri and Taylor, at the Punjab Irrigation Research Institute, have worked on exchangeable bases and have evolved methods to determine them. Basu, and Crowther and Basu have devised a single two compartment electro-dialysis cell for the determination of exchangeable bases.

Dalip Singh and Sukh Dayal at Lyallpur have conducted base exchange studies on the Punjab soils in connection with reclamation of alkali lands. The several methods of determining total and exchangeable bases from time to time and their applicability and accuracy have been subjected to a critical study by several workers in India. Puri compared different methods of base exchange capacity and concluded that the different methods give different values, which refer to different points on the titration curves of the soils. Puri calculated the titration value (T/2) from the acidoid equivalent interpolated at a point 4.0 PH units higher than the initial PH; a view in conformity with Mattson's ideas.

From a comparative study of the routine methods using hydrogen clays, 'hydrogen' and acid soils, Mukherjee and his co-workers found that the differences in the cation, the PH effects and the time of interaction accounted for the observed discrepancies in the base exchange capacity by the various methods.

Further work of S. K. Mukherjee on homoionic clay salts (clay saturated with one kind of cation) has shown that the exchange equilibrium is dependent on PH

and the exchange power of cations should be compared at a fixed PH. The equilibrium in heteroionic clay salts (i.e. clays saturated with more than one kind of cation) is determined not only by the nature and ratio of cations but also the way in which they have been incorporated into the system.

Soil Survey and Soil Profiles

Four decades ago, the terms ' pedology ' and ' soil science ' were not known. Views on soil as the medium for plant growth were very much under the influence of Liebig's mineral theory of plant nutrition. Scientific agriculture meant agricultural chemistry. It was considered that a simple chemical analysis was enough to assess soil fertility and that it could be maintained by making good the deficiencies revealed by such analysis. Soil work began with surveys to classify soils in terms of sufficiency or deficiency of the major fertiliser constituents.

As early as 1906, Leather examined profiles of several black soils and alkaline soils in regard to depth distribution of soil layers, salts and moisture. The earlier surveys distinguished four major types of soils :— (1) The Indogangetic alluvium, (2) the black or regur soils, (3) red soils lying on metamorphic rocks, and (4) lateritic soils. In addition, stretches of alluvium along the east coast at the mouths of the great rivers have been noted to occur. Soils from the plains have been shown to contain much less organic matter and nitrogen than European soils and to be generally deficient in other constituents also, particularly in phosphates and to a lesser extent in sulphate and lime. The Indian Tea Association carried out a soil survey of tea districts.

While there has never been an all India Soil Survey, there have been quite a number of soil surveys dealing with limited areas. In most cases such surveys were undertaken in connection with the solution of definite problems or for finding the suitability of soils for irrigation by post-irrigation or pre-irrigation surveys. Soil fertility surveys, mainly to assess the nutrient status of the surface and subsoils were conducted in many Provinces and States—Madras, the Punjab, United Provinces, Central Provinces and Berar, Bihar, Assam, Bengal, Travancore State, and Cochin State.

Soil surveys in connection with irrigation projects have been made in Madras, the Punjab, Sind, Bombay, Mysore State, Bengal and Hyderabad State. Soil surveys for the specific purpose of assertaining the suitability of areas for cinchona and clove have also been carried out.

Genetic soil studies and the classification of soils based on morphological and chemical composition of the profile were introduced by Basu in India and the investigations in this line in the Punjab, United Provinces, Bombay, Bengal, Jammu and Kashmir may be mentioned. Provincial soils maps have been published by Lander, Bal, Sahasabuddhe, Viswanath and Ramiah.

Schokalsky (1932), based on the information available, drew a soil map of India on the Russian system. In 1935, the Geological Survey of India undertook a general

survey of soils and a note along with a map has been published by Wadia, Krishnan and Mukherjee describing the geological foundations of soils of India. Viswanath and his co-workers at the Imperial Agricultural Research Institute, New Delhi collected 43 typical virgin soils profiles and studied them in detail. The results are discussed in their publications and subsequent papers. The soils of India have been classified and mapped by Viswanath and Ukil on the basis of colour and N.S. Quotients.

In a scheme financed by the Imperial Council of Agricultural Research, the available data and information on soils and related problems from the Provinces and States have been collected and collated. Eight soils groups are distinguishable: (1) red soils which may be classed as red loams, yellow earths etc., (2) laterite and lateritic soils, (3) black soils of varying types, including the black cotton soils or regur, (4) alluvial soils—an ill-defined group, (5) forest and hill soils, (6) desert soils, (7) saline and alkaline soils, and (8) peaty and marany soils. Based on the available information tentative soils maps of the Provinces and States, showing the general distribution of major soils groups and land features have been drawn. In this report (yet to be published) have been shown the limitations of the available information and the need for an accurate soils map of India for a proper and co-ordinated development of scientific agriculture.

The red and lateritic soils of India have been studied by Raychaudhuri, Sen and others in great detail, including their mineralogical composition. Bal, Ramiah, Krishna, Viswanath, Basu and others have studied the profile characters of black and black cotton soils of India. Profile studies of the gangetic alluvium have been conducted by B. K. Mukherjee and his co-workers in the United Provinces.

Soil Physics and Physical Properties of Soils

Shukla and Nayar have studied the effect of exchangeable bases on the percolation and permeability of soils.

Basu and Sirur studied the effect of rotational crops and green manures on soil structure under conditions of perennial irrigation for sugarcane cultivation on black cotton soils. Sreenivasan traced the poor yielding quality of the black cotton soils of Central India to a loss in soil structure resulting from bad drainage and water-logging.

Annett (Central Provinces), Harrison and Sivan (Madras) variously attributed the colour of black cotton soils to titaniferous magnetite and colloidal hydrated double silicate of iron and aluminium. Ramamurthi and Viswanath in an objective study of soil colour, using spectroscope and photo-electric and thermo-electric instruments, found that humus contributed nothing to the reflectance in the violet and only very little in the blue, thus showing the inorganic pigment as the chief contributor to soil colour in this region. The broad conclusions arrived at are that red soils are alkali-leached iron silicates, black soils are those whose inorganic component corresponds more or less to iron silicate, while yellow and grey soils are the result of acid leaching of iron silicate.

The investigations on soil moisture and dry farming have been chiefly concerned with movement of soil moisture and salts in soils and moisture conservation. Ramdas and his co-workers studied the exchange of moisture between soil and atmosphere, ascent of water in soils and capillary movement of salt solutions. Puri put forth evidence in support of the capillary tube hypothesis. Subba Rao described the seasonal fluctuations in soil moisture in black soil as affected by various cultural and other operations like scooping and bunding and showed that scooping increased the moisture absorptive capacity of soil. Dalip Singh and Nijhawan in a critical study of the effect of soil mulch on conservation of soil moisture, showed that the effectiveness of mulches depended on the initial moisture contents and texture of the soil.

Soil erosion and Soil conservation

The problems of soil erosion and soil conservation are receiving increasing attention in recent years. Gorrie has dealt with various aspects of the soil erosion problem as also methods of control. The sub-committee of the National Planning Committee has submitted a comprehensive report on soil conservation and forestry including afforestation, controlled grazing and land utilisation. Kanitkar, Daji and Gokhale estimated the annual loss by erosion and surface run off as 0.2 tons to 57.5 tons per acre. Subba Rao reported results of run off and soil erosion experiments on a black soil of Madras. Growing of a leguminous crop (groundnut) minimised the soil loss as compared to scooped and fallow plots. Soil conservation has been given a legal standing in India for the first time by an Act passed by the Government of Bombay.

Soil Reclamation

Large areas of alkaline and saline lands exist copiously in the Punjab, Sind and United Provinces. The origin and reclamation of alkali lands have been studied by Leather and later workers. The work on alkaline and saline lands is summarised in a bulletin published by the Indian Society of Soil Science. In the Punjab the main salt present is sodium sulphate and the soil deterioration takes place in two stages ; the first is that of salt accumulation and the second that of alkalisation due to the transformation of the normal clay into sodium clay. In the *chopan* soils of the Deccan the most common feature is the high sodium saturation of the surface soil and a zone of accumulation of salts in the profile.

Dhar suggested the use of molasses in the reclamation of alkali soils of the dry tracts of Northern India. Talati showed that mixed saline soils improve merely by leaching and leaching increased the alkalinity of saline soils. The use of gypsum or sulphur in combination with farm yard manure gave the best results with saline and alkaline soils.

Soil Organic matter

C. N. Acharya, Sircar and others have investigated the composition of rice straw under different soil conditions. Acharya has worked out a modified scheme of proximate analysis of soil organic matter. The kinetics of oxidation of soil organic

matter has been studied by Puri, Raychaudhuri and others. The role of soil organic matter in plant nutrition has been studied by Viswanath, Subrahmanyan and others. The variation in carbon and nitrogen contents and the carbon-nitrogen ratio in soils has been also studied by a number of workers.

Soil Phosphates

Das examined the availability of phosphate in calcareous soils and suggested K_2CO_3 method as a reliable index of available phosphates for calcareous soils. Several aspects on soil phosphates have been considered at a syposium held under the auspices of the Indian Society of Soil Science.

Raychaudhuri and Mukherjee examined the fixation of phosphates by red soils, soil minerals and gels. In general the p.p.m. of phosphorus fixed increases with the percentage of sesquioxides in Hcl extract of the soils.

Biochemistry of swamp and water-logged soils

Harrison and his colleagues indicated that the algal film which covers the surface of swamp paddy soils is the chief agent in causing the aeration of the roots of the crop. Subrahmanyan and his co-workers have summarised our present knowledge of the biochemistry of water-logged soils, in regard to the transformations of carbon, nitrogen and minerals.

Agricultural Bacteriology

The work in this branch of science in India was started on a systematic basis in 1910-11 at Pusa. The Imperial Agricultural Research Institute made substantive contributions towards the bacteriology of some dairy products, industrial bacteriology with reference to fuel gas acetone and butanol production and bacterial diseases of agricultural crops and silk worms, besides the main work on bacteriology of soils and manures.

(a) *Soil Microbiology :* Hutchinson, Walton, Joshi, De, Desai, Biswas and others recorded the fluctuations in soil flora, and their morphological and physiological activities. Desai and Sunder Rao developed a new method of assessing the manurial requirements of soils from the amount of Co2 evolved from the soil.

(b) *Soil nitrogen :* Interest on soil nitrogen both from scientific and practical value has been evinced by the series of papers on this subject by Norris, Viswanath (Madras), Hutchinson (Pusa, Plymen, Bal (C.P.), Sahasrabuddhe (Bombay), Sreenivasan, Subrahmanyan (Bangalore), Dhar (Allahabad) and others. As a result of these investigations the problems that come to the foreground are (i) the natural recuperation of nitrogen in unmanured soils, (2) the losses of nitrogen, in annoniacal, nitrite and elemental form, (3) Chemical and photochemical fixation of nitrogen, and (4) biological process of symbiotic and non-symbiotic nitrogen fixation and nitrification.

Sahasrabuddhe explained the continued fertility of the soils of Bombay-Deccan, without addition of manure, as being due to a considerable fixation of atmospheric

nitrogen, probably due to bacterial agency during the monsoon season. Bal also reported that in the black cotton soils of Central Provinces the nitrogen-fixing power (natural recuperation of nitrogen) is somewhat higher in the months of May, June and July.

Viswanath and Subrahmanyan, reported losses of soil nitrogen but the losses are minimised when sucrose or cellulosic materials are added to the soil.

Ramamurthy, working with Viswanath, reported formation of nitrite when air is passed over moist phosphorus or cane sugar kept at 50°C and he attributes this to chemical effects consequent on the chain reactions. Dhar and his co-workers have in a series of papers put forward experimental evidence of photonitrification in soils. Walton (1929), De (1939), Singh (1942) reported that green algae fix atmospheric nitrogen. Chaudhuri (1940) found that the bacteria living in the wheaths of algae are responsible for nitrogen fixation. Walton (1915) showed that the nitrogen fixing power of *Azotobacter* isolated from different Indian soils varied from 3.5 mgms. to 7.4 mgms. per gram of mannite. Sen, Viswanath, Sahasrabuddhe and Vyas reported that cereals (rice, maize) are capable of appropriating atmospheric nitrogen. Vyas (1941) conclusively showed that the mechanism of nitrogen fixation by maize is partly through the plant itself and partly through the stimulating effect of root secretions on the *Azotobacter* activity of the soil. Dhar contends that nitrogen fixation in soil can take place in complete absence of bacteria, by sunlight and oxidation of energy rich materials.

Joshi at Pusa found that no residual nitrogen is found in the case of nodule organisms as contrasted with *Azotobacter*. Rajagopalan at Coimbatore showed that the location of nodule is of greater importance than their number or size. Evidence of other workers indicates that increases in soil nitrogen due to growing leguminous crops is located in the stratum of the soil in which the plant roots feed. The presence of bacteriophage of root nodule organisms has been found to be due to the association of the plants with the same soil for a number of years.

Manures and Fertilisers

Investigations on the composition and use of manures, fertilisers and studies on the problem of soil fertility have figured prominently in Indian work. Analysis of soils supplemented by field observations in different parts of the country established the general deficiency in organic matter, nitrogen and phosphorus. These observations were followed up by pot culture studies and field experiments to test the effect of nitrogen, phosphate and potash individually and in different combinations and to study by prolonged differential treatment the nature and effect of particular deficiency of crop yields and compositions. The factors concerned in the fixation of fertiliser constituents by the soil and the efficiency of these constituents as judged by their recoveries in the plant have been studied with reference to soil type, soil conditions, moisture availability and climate.

There are several publications dealing with manurial experiments carried out in India. While the work of Sahasrabuddhe relates to manurial experiments

in Bombay and that of Allen (1933) is a consolidated record of field experimental work in C. P. and that of Vaidyanathan (1934) is a compilation of the data and other statistical analysis for all the crops, Sethi (1940) and Rege (1941) have respectively compiled the manurial experiments on rice and sugarcane. Recently Panse (1946) compiled information on the manuring of cotton. Again, the optimum dose of the fertilizers, the proper form in which they should be used, the time of application, etc. depend on the soil, the crop and the climatic conditions and require long continued experiments to be accurately ascertained.

The more important observations on the effect of manures on crop yields in the different provinces are summarised below. In the highly acid soils of Assam, liming at the rate of 20 mds. or more of lime per acre, according to acidity, gave a high increase of yield of the crops. Generally organic manures such as cowdung and oil-cakes gave better results with most of the crops, specially sugarcane, than soluble artificial fertilisers. Ammonium sulphate increased yields of tea proportionately, 160 lbs. of N giving the optimum yield.

In Bengal where the soil lacks both nitrogen and phosphorus, fertilisers like diamophos, amophos, niciphos, etc., have been found to increase the yield of paddy, particularly the 'aman' variety. Manurial experiments on jute have been mainly confined to the acid soil of the Dacca Farm. Potassic manures combined with liming increased the yield and height of plants and checked incidence of stem-rot of jute.

The soils of Bihar are deficient in nitrogen and phosphorus, particularly the latter. Phosphoric acid increased the yield of crops and more so in combination with nitrogen either in the inorganic or organic form Potash alone depressed the yield but crop response was obtained when potash was applied in combination with nitrogen or phosphoric acid or both. Cake or farm yard manure plus Super were better than complete inorganics.

The soils of Orissa are like those of Bihar, generally deficient in nitrogen and phosphorus and manuring with both these elements has given good response. Super-cake and ammonium sulphate are generally used for manuring purposes.

In Madras, the need for an adequate supply of organic matter as well as nitrogen and phosphorus is clearly indicated in all the experiments carried out to grow the economic crops like cotton, etc. Bulky organic manures such as green manure in combination with Super and also ammonium sulphate or cake are particularly necessary for paddy wherever it is grown. The application of oil-cakes in conjunction with ammonium sulphate has given good response with the popular varieties of sugarcane. Phosphates although not needed as a fertiliser may be added to enrich the quality of sugarcane juice.

In Bombay, the lateritic soils respond very well to an application of phosphates combined with green manure or F. Y. M. The black clayey soils produce increased yield of crops like jowar, cotton and sugarcane when treated with F. Y. M. of cake plus a top dressing of nitrogenous artificials Potash manure with Super appears to be necessary for groundnut.

The nitrogen content of the soils of Central Provinces and Berar is quite low and most crops have responded to treatment with organic and inorganic nitrogen fertilisers. Bulky organic manures such as cattle dung or cakes, are recommended for all the soils. Phosphate deficiency appears to exist in areas growing paddy and cotton and good responses have been obtained by treatment with Super alone or in combination with green manure. Potash appears to be necessary for groundnut on the light loamy red soils. Liming of soils even low in calcium status has been ineffective.

Nitrogenous manuring of sugarcane in different farms in the United Provinces and particularly in the Gorakhpur District has shown good response. A mixture of organic and inorganic manures is better than either of them applied singly. The response varies with the variety of cane and type of the soil. Phosphate deficiency seems to exist in certain districts but manurial work to correct it has not been tried except at Shahjahanpur where the response to application of phosphate has been negative. Potash is generally not necessary. Wheat and cotton at Cawnpore showed significant increase of yield with an application of nitrogenous manures alone, chiefly organic, and in combination with Super.

Generally speaking the soils at the IARI Farm in the Delhi Province respond to nitrogenous and phosphatic fertilisers. Ammonium sulphate and rape cake have given in general higher yields of wheat than other organic manures as well as a combination of organic and artificial fertilisers. With fodder berseem it was found that not only were the yields higher in the phosphate-manured plot but the uptake of phosphoric acid by the crop from the phosphoric-acid-manured plot was very high so much so that a 100 % increase in the crop yield has been accompanied by 300 % increase in phosphate content.

Wheat in the Punjab is seldom manured unless it is sown late or rain is late in the season. An application of ammonium sulphate to late-sown wheat supplies readily available nitrogen and is highly remunerative. The effect of phosphoric acid is not uniform probably because all the soils do not need it. Organic manures in the form of either F. Y. M. cakes or green manures and also ammonium sulphate are beneficial to cotton and sugarcane.

In Sind, compost alone or in combination with ammonium sulphate considerably increases the yield of irrigated wheat. A preceding crop of jowar has an adverse effect on the yield of wheat. Manuring with either cakes alone or a combination of compost and ammonium sulphate gives high yield of cotton. Ammonium sulphate is best added during the flowering period. Paddy shows optimum response with 100 lbs. of nitrogen added as ammonium sulphate. The soil of Sakrand which is fairly rich in phosphoric acid and potash does not respond to the application of these fertilisers. In Sind water is a limiting factor and the manuring is efficacious only when proper irrigation is done.

The soils of the North West Frontier Province are poor in phosphoric acid and application of phosphoric acid as Super or bonemeal and of roganic manures, preferably green manures, has been found to increase the yield of wheat, sugarcane,

maize, fruits, etc. There are large amounts of soluble salts in the soil. For this and owing to scarcity of water, irrigation is essential.

In Coorg, paddy responds to nitrogenous manures alone or together with phosphates, but the economics of the doses has not been carefully studied. Potash is not deficient.

The lateritic soils of Cochin give increased yield of crops by treatment with nitrogenous manures preferably ammonium sulphate and cakes, although the soil contains 0.1 % of nitrogen. Super gives good response when used in conjunction with ammonium sulphate. Potash is not necesseary.

Paddy in Mysore, responds markedly to an application of green manures. Artificials act well only in combination with green manure. Experiments at the Irwin Canal Farm show that sugarcane requires, for the best results, a heavy dose of nitrogen (400 to 500 lbs.) applied preferably as a mixture of organic and inorganic manures and also potash. Tobacco needs nitrogen, phosphoric acid and potash. Acid soils are limed to reach a PH between 6 and 7 for good growth of coffee. A supply of phosphoric acid, potash and nitrogen in the form of a mixture of inorganic and organic fertilisers is best for coffee.

Experiments at Delhi with ammonium nitrate and T.N.T. showed that T.N.T. up to 3 % had no harmful effect on wheat or maize. Phosphatic manuring of legumes (berseem) had increased the soil nitrogen and soil fertility, with a residual effect in three succeeding seasons. The amount of Co_2 Vol under specific conditions from soil samples of the Pusa Permanent Manurial Experiments plots has been correlated with crop yields.

Organic manures have been shown to take part in the direct nutrition of plant and ultimately influence the quality of the crop both for animal and human nutrition.

No account of manure and fertiliser work would be complete without mentioning the work on composts. At Indore, methods have been developed for converting all farm waste material into useful manure. Similar work has been done in Bengal, Bihar, United Provinces, Bombay and Bangalore. The Bangalore process of composting town waste is being given a wide trial by several municipalities in India.

Fodder Production

Fodder production in India may be conveniently considered under two well marked divisions :— (1) Grass production and (2) The production of crops grown for fodder.

This rough division, however, requires some modification because there are certain introduced grasses (e.g., Guinea grass) which are really treated as crops, and also the main fodder over the greater part of India is *Kadbi* which consists of the dried stalks of sorghum after the heads have been removed for grain.

The botanists of India have always paid a good deal of attention to grasses, not only describing them but also referring to their uses. The Forest Department have devoted a very great deal of attention to grass land improvement and *The Indian Forester* contains a large number of useful articles on this subject.

The whole question of grass land improvement has come very much to the front and was discussed at considerable length at the Animal Husbandry Wing of the Board of Agriculture which met in Madras in December, 1936 and at the Cattle Conference which met in Simla in May, 1937. One of the important recommendations of these conferences was the formation of a Standing Fodder and Grazing Committee at the Centre, as one of the committees of the Imperial Council of Agricultural Research and the formation of similar committees in the provinces.

Of introduced grasses grown practically as crops, the important one are Guinea grass (*Panicum miximum*) and Rhodes grass (*Chloris gavana*) while experiments have been made with Elephant grass (*Pennisetum purpureum*), Sudan grass (*Andropogen halepense*), Para grass (*Panicum muticum*), Teff grass (*Eragrostis abyssinica*) and others. Where irrigation and manure are available or where the washings of byres can be utilized, these grasses give an excellent return and green fodder throughout the year. It is proposed to experiment with certain other exotic grasses likely to be of use including some of the African Digitarias. There has not been much experimentation on the effect of fertilisers on grassland.

As for fodder crops, mention has already been made of the use of *Kadbi* viz., the dried stalks of grain varieties of *Jowar** which are grown specially for fodder. These, as a rule, have thinner stalks and less grain than the grain jowars proper and almost every jowar tract has got one or more of these fodder varieties. Maize is also grown for fodder (as well as grain) among the leguminous plants. The most important is berseem (*Trifolium alexandrinum*) which grows well in Northern India, i.e., N.W.F. Province, Sind, Punjab, United Provinces and Bihar, under irrigation. The introduction of this crop has brought about a great improvement in the general system of farming since it not only gives an admirable fodder but also definitely improves the ground and makes a considerable difference to the succeeding crop.

As regards, recent research, Sayer (1936) working in Pusa with Teosinte, Napier grass, Guinea grass, Florida Begger weed, Sudan grass, Rhodes grass, Paspalum grass, Kikuyu grass and Bermuda grass under unirrigated conditions concluded that all these exotic grasses do well in the monsoon when other fodder grasses are available in abundance. None is of any value when there is not grass, i.e., in hot weather and in winter. Berseem is the best irrigated fodder crop.

Chatterjee and Abdul Hye (1938) concluded that moderate use can be made of water hyacinth as a fodder for cattle. In order to derive full benefit, it should be fed in combination with oil cakes, concentrates or with other feeds. Kumar and Godbole (1939) found that restriction of animals to limited areas (compartments) enables intensive grazing and avoids waste, intermittent grazing provindes rest, and rotational grazing prolongs the grazing period. By protecting the grass cover, the erosion of soil and denundation of land is effectively prevented.

* (Sorghum) but there are also certain types of *jowar*.

Application of Statistics to agricultural experiments

Perhaps in no branch of agricultural science has the effect of pure science been more marked than in the lay-out and interpretation of field experiments. As far back as 1911, A. C. Dobbs wrote a preliminary note on the technique of field experiments at Sabour. In 1917 Parnell wrote an article on the probable error of field experiments in the case of variety trials with rice and in 1923 B. N. Sarkar wrote a similar article on the probable error in variety trials with paddy at Bombay. In 1928 Iliffe and Viswa Nath published a Bulletin (No. 28 of the Madras Agricultural Department) on *The Conduct of Field Experiments.* A landmark was the founding of the Statistical Laboratory under Mahalanobis at the Presidency College, Calcutta—a laboratory which has been India's school of this subject and which in addition to its admirable research work, also trains annually an increasing number of agricultural and other workers in the theory and practice of modern statistics. The Imperial Council of Agricultural Research in 1930 appointed its own Statistician and Vaidyanathan and later, Sukhatme have both by consultation and by publication done a great deal to make known the principles of agricultural statistics and to correct and guide work at the experiment stations. At the Imperial Agricultural Research Institute at Pusa, the late F. J. F. Shaw used to give a series of lectures on statistics as applied to agriculture and shortly before he died he completed a publication, *A Handbook of Statistics for use in Plant Breeding and Agricultural Problems* which is a useful handbook for all concerned with field experiments in India. Sampling problems have been always with us. In 1913-14 Leather published a Memoir (Chemical Series III, 4) on *Experimental Error in Sampling Sugarcane.* In the same year he published another Memoir (Chemical Series III, 6) entitled *The Yield and Composition of the Milk of the Montgomery Herd at Pusa and Errors in Milk Tests.* In 1926-27 J. A. Hubback, I.C.S., published at Pusa Agricultural Research Institute, (Bulletin 166) *Sampling for Rice Yield in Bihar and Orissa.*

Mahalanobis (1944), Sukhatme *et. al.* (1946), Panse and Kalamkar (1944) have done extensive work on sampling technique for the estimation of crop yields and areas sown to crops under conditions prevailing in different parts of India.

In recent years considerable progress has continued to be made in the application of the modern methods of statistics to field experimentation and the size and shape of plots have received detailed attention. The main findings are :—

(*a*) *Sugarcane :* Based on tonnage experiments with Co-205 & Co-213 at Pusa, Sayer *et. al.* (1936) found a plot size of 12/242 of an acre (120′ x 18′) eminently suitable for field experiments with unirrigated sugarcane. Studying the factors that influence the error of field experiments Sayer and Krishna Iyer (1936) recommended a plot size of 1/16th to 1/27th acre. Vogholkar *et. al.* (1940) studying this aspect under Padegaon conditions recommended a plot size 54.44′ x 32′. It was found that when plot size was greater than 1/90th acre, the longer plots in general, showed less variation than the shorter plots.

(*b*) *Jowar :* Studying the influence of shape and size of plots on the effective precision of field experiments with *jowar*, Kulkarni *et. al.* (1936) found that long and

narrow plots have greater precision than wider plots of the same area, and that the standard deviation between plots decreased as the plot area increased.

(*c*) *Cotton :* Panse (1941) working on cotton found a general decrease of block efficiency with increasing block size. More compact blocks of the same size showed a higher efficiency. Blocks of identical size and shape but consisting of long plots also showed somewhat higher efficiency than blocks with short plots of the same size.

(*d*) *Wheat :* Krishna Iyer (1942) in his studies of the wheat uniformity trials data of Karnal (Punjab) concluded that the best size of plot for experiments with wheat was about 400 sq. ft. Ansari and Sant (1943) studying soil heterogeneity in relation to size and shape of plots for wheat, and considering the standard error and relative efficiencies recommended a plot size of 270 sq. ft. as optimum for wheat varietal trials.

(*e*) *Rice :* Bose *et al.* (1936) working with rice uniformity trial data of Assam found that the smallest residual variance occurred with plots of size 30′ x 20′ (1/72.6 acre).

Miscellaneous

The field of work covered is so wide that it has not been possible to do justice to the work that has been done ; some aspects have been entirely omitted, for example, agricultural economics and dry farming. With regard to the latter mention may however be made to Parr (1943) who has shown the possibilities of utilising surplus monsoon river water by flooding the land with a view to supplementing the low monsoon rainfall and thereby increasing the *kharif* and *rabi* crop yields under dry farming conditions.

VI AGRICULTURAL ENGINEERING

Thirty years ago agricultural engineering was, in a small way, just beginning to receive attention and only two provinces were employing agricultural engineers ; their work consisted mainly on experiments in well boring and water lifts and the first considerations into the introduction of certain labour-saving machines. As time passed it became apparent that agricultural engineering was destined to play an important part in the realm of agriculture and more of the provinces included an agricultural engineer on their regular staff.

Today it is playing an important part in all Provincial programmes. In October 1945 a Division of Agricultural Engineering was formed within the Imperial Agricultural Research Institute, New Delhi, and is now in the process of being built, equipped and staffed, with the following aims and objects : to foster agricultural mechanization, to reduce the labour requirements of farming, to ease the efforts of both cultivator and bullock and to increase operating efficiency. In practice this will mean the keeping in close touch with the needs of everyday-farming, seeking to improve machines and methods so as to keep implement development in line both

with practical requirements and crop husbandry advances—the collecting, collating and distribution of information concerning agricultural machinery and its use. Other functions will be to carry out tests trials and demonstration of new and improved machines and methods and either direct or in co-operation with manufacturers to undertake development work. It will also be actively engaged with practical education and the training of students and of machinery instructors.

Agricultural engineering now covers a very considerable range of subjects, and in India these concern mainly (*a*) the improvement of and modification to existing implements, aiming at an increase in their efficiency and performance, (*b*) the design of new implements to be operated by bullocks, (*c*) the design, within economic limits, of small threshers, winnowers etc., (*d*) the improvement of bullock drawn carts and other transport, (*e*) well boring and water lifts, (*f*) tractors and tractor-drawn implements, (*g*) soil erosion and land conservation. Organised research in these subjects, so little of which had been done is now a feature in agricultural programmes throughout the country and as a result there are at present few places where an improved plough, water lift or other implement is not being widely manufactured or used. Inventions and ideas from individuals from the rural areas are coming forward in increasing numbers and are being investigated, modified and improved by agricultural engineers. Every encouragement and help must be given in this direction.

As far back as 1922 the Mysore Agricultural Department designed and put on to the market a new steel bar suited to the ordinary wooden cattle plough; in 1924 the Agricultural Engineer in the C. P. invented a reversible blade hoe and grubber; in Bombay and in Burma paddy transplanting machines were invented, and in 1928 in Madras an improved blade harrow was designed and manufactured. Numerous other examples could be cited. Such work has continued and is proceeding apace and today mass production by private firms and government workshops of iron ploughs and implements designed by Agricultural Engineers, suitable for local conditions and requirements is proving a service of great benefit and assistance to the small cultivator.

The design of bullock-drawn implements incorporated considerable investigation and research into the draught of these implements. Formerly this had been carried out by crude and comparatively inaccurate spring type of dynamometer. The availability now of modern types of dynamometers has made possible accurate research into this subject and in 1938-39 comprehensive tests were carried out by the Imperial Agricultural Research Institute on a collection of country ploughs collected from all the provinces and States.

Land improvement and development is of the greatest importance incorporating the problem of soil erosion and water retention on the land. In certain provinces, notably in Bombay, much valuable work had been done. Dry farming systems, employing contour bunding, have also made great strides, again notably in Bombay and are now under study in Madras, Hyderabad State and the Punjab.

Mechanical ploughing by tractors and tractor-drawn implements is actively employing the attention of agricultural engineers and the utilisation of this method

to specific problems, i.e., eradication of pernicious weeds, the opening up of virgin land and for soil erosion and drainage have proved highly successful and shown that development and expansion in these fields has enormous possibilities with far-reaching beneficial effects both to the agricultural community and to the country as a whole.

Agricultural engineers have much to their credit taking into consideration the short space of time in which they have worked and the facilities afforded them. Greater facilities are now being given; they in return must organize their efforts, cooperate and coordinate and the result of these in the future must, in no small way, further the progress and prosperity of the country.

VII CONCLUSION

The present survey, sketchy and incomplete though it may be, has shown that much has been achieved in the past four decades and that foundations have been well and truly laid for the further improvement of agriculture. Future progress however depends on broad-based, well-planned and coordinated research. There is no dearth of talent in our country and if equipment and facilities are provided both for research purposes and for the training of the technical personnel required, the sciences underlying agriculture will be able to contribute materially to the solution of India's food, clothing, housing and industrial problems.

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